

Refine Search

Search Results -

Term	Documents
(16 NOT 10).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	1
(L16 NOT L10).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	1

Database:

US Pre-Grant Publication Full-Text Database
 US Patents Full-Text Database
 US OCR Full-Text Database
 EPO Abstracts Database
 JPO Abstracts Database
 Derwent World Patents Index
 IBM Technical Disclosure Bulletins

Search:

L17

Refine Search

Recall Text

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Search History

DATE: Friday, January 21, 2005 [Printable Copy](#) [Create Case](#)

<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>	<u>Set</u> <u>Name</u> result set
side by side			
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=AND</i>			
<u>L17</u>	L16 not L10	1	<u>L17</u>
<u>L16</u>	L15 and (L7 or L9)	21	<u>L16</u>
<u>L15</u>	L14 and L5	407	<u>L15</u>
<u>L14</u>	L13 and L2	1893	<u>L14</u>
<u>L13</u>	L3 same (DNA or RNA or enzyme or protein or antibody or carbohydrate or biomolecule)	6496	<u>L13</u>
<u>L12</u>	L10 not L11	19	<u>L12</u>
<u>L11</u>	L10 not L8	20	<u>L11</u>
<u>L10</u>	L9 and L6	39	<u>L10</u>
<u>L9</u>	(sol-gel) same (particulate or particle)	4007	<u>L9</u>
<u>L8</u>	L7 and L6	24	<u>L8</u>

<u>L7</u>	(sol-gel) same (crush or crushing or grind or grinding or press)	942	<u>L7</u>
<u>L6</u>	L5 and L4	1069	<u>L6</u>
<u>L5</u>	(diameter) same (micron or micrometer)	169297	<u>L5</u>
<u>L4</u>	L3 and L2	6336	<u>L4</u>
<u>L3</u>	(sol-gel or silica or silicate or glass) same (entrapped or immobilized or encapsulated or trapped or doped)	66694	<u>L3</u>
<u>L2</u>	(microfluidic or microchannel or microarray or microcolumn or microanalytical or microchip or miniaturized or miniaturization)	168415	<u>L2</u>
<u>L1</u>	Robotti-Karla.in.	3	<u>L1</u>

END OF SEARCH HISTORY

8/3,K/61 (Item 4 from file: 73)
 DIALOG(R) File 73:EMBASE
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05977007 EMBASE No: 1995004178

Urea and lactate determined in 1-muL whole-blood samples with a miniaturized thermal biosensor

Xie B.; Harborn U.; Mecklenburg M.; Danielsson B.
 Pure and Applied Biochemistry, Lund University, Box 124, S-22100 Lund
 Sweden
 Clinical Chemistry (CLIN. CHEM.) (United States) 1994, 40/12
 (2282-2287)
 CODEN: CLCHA ISSN: 0009-9147
 DOCUMENT TYPE: Journal; Article
 LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Urea and lactate determined in 1-muL whole-blood samples with a miniaturized thermal biosensor

A miniaturized flow-injected thermal biosensor was developed for the determination of urea and L-lactate in undiluted blood in 1-muL samples. The sensor employed a small enzyme column constructed of stainless steel tubing and microbead thermistors. Urease and lactate oxidase/catalase were separately immobilized onto controlled-pore glass beads, which, in turn, were charged into the enzyme column. With a flow rate of 70 muL/min, linear analytical ranges from 0.2 to at least 50 mmol/L and 0.2 to ...
 ?

Set	Items	Description
S1	48715	(MICROFLUIDIC OR MICROANALYTICAL OR MICROCOLUMN OR MICROCHANNEL OR MICROARRAY OR MINIATURIZED OR MICROCHIP OR MINIATURIZATION)
S2	6563	(SOL-GEL OR SILICA OR SILICATE OR GLASS) (S) (ENTRAPPED OR IMMOBILIZED OR ENCAPSULATED OR TRAPPED OR DOPED)
S3	2850	S2 (S) (DNA OR RNA OR PROTEIN? OR CARBOHYDRATE? OR ENZYME? OR BIOMOLECULE?)
S4	354	S2 (S) (ANTIBODIES OR LIPASES)
S5	3021	S3 OR S4
S6	223	S5 AND S1
S7	119	RD (unique items)
S8	61	S7 NOT PY>2002
S9	13324	(DIAMETER) (S) (MICRON? OR MICROMETER?)
S10	0	S8 AND S9
S11	0	(SOL-GEL) (S) (PARTICULATE? OR PARTICLE?)
S12	8746	(GLASS OR SOL-GEL OR SOLGEL OR SILICATE OR SILICA) (S) (PARTICULATES OR PARTICLES)
S13	1	S8 AND S12
S14	1066	(GLASS OR SOL-GEL OR SOLGEL OR SILICATE OR SILICA) (S) (CRUSH OR CRUSHING OR GRIND OR GRINDING OR PRESS OR PULVERIZE)
S15	0	S8 AND S14
S16	8343	(MICRONS OR MICROMETERS) (S) (DIAMETER)
S17	0	S8 AND S16

?

COST

21jan05 14:05:08 User259876 Session D701.2
 \$5.02 1.570 DialUnits File155
 \$7.56 36 Type(s) in Format 3
 \$7.56 36 Types
 \$12.58 Estimated cost File155
 \$8.76 1.524 DialUnits File5
 \$44.00 22 Type(s) in Format 3
 \$44.00 22 Types
 \$52.76 Estimated cost File5

\$11.96 1.125 DialUnits File73
\$11.76 4 Type(s) in Format 3
\$11.76 4 Types
\$23.72 Estimated cost File73
OneSearch, 3 files, 4.220 DialUnits FileOS
\$3.99 INTERNET
\$93.05 Estimated cost this search
\$93.93 Estimated total session cost 4.448 DialUnits

?

Return to logon page!

Welcome to DialogClassic Web(tm)

Dialog level 04.20.00D
Last logoff: 18jan05 16:05:24
Logon file001 21jan05 13:49:00

*** ANNOUNCEMENT ***

--Important Notice to Freelance Authors--
See HELP FREELANCE for more information

NEW FILES RELEASED
***German Patents Fulltext (File 324)

***Beilstein Abstracts (File 393)
***Beilstein Facts (File 390)
***Beilstein Reactions (File 391)

UPDATING RESUMED
Medline (Files 154 & 155)

REMOVED
***Info Sci & Tech Abs (File 202)
***Internet & Personal Comp Abs (File 233)
***CanCorp Financials (File 491)
 >>> Enter BEGIN HOMEBASE for Dialog Announcements <<<
 >>> of new databases, price changes, etc. <<<
KWIC is set to 50.
HILIGHT set on as ' '
* * *

File 1:ERIC 1966-2004/Jul 21
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Set	Items	Description
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Cost is in DialUnits		
?		
B 155,	5,	73
21jan05 13:49:19 User259876 Session D701.1		
	\$0.80	0.228 DialUnits File1
	\$0.80	Estimated cost File1
	\$0.08	INTERNET
	\$0.88	Estimated cost this search
	\$0.88	Estimated total session cost 0.228 DialUnits

SYSTEM:OS - DIALOG OneSearch
File 155:MEDLINE(R) 1951-2005/Jan W3
(c) format only 2005 The Dialog Corp.
*File 155: Medline has resumed updating. Please see
HELP NEWS 155 for details.
File 5:Biosis Previews(R) 1969-2004/Dec W4
(c) 2005 BIOSIS
*File 5: Price change effective Jan 1, 2005. Enter HELP
RATES 5 for details.
File 73:EMBASE 1974-2005/Jan W3
(c) 2005 Elsevier Science B.V.
*File 73: Price change effective Jan 1, 2005. Enter HELP
RATES 73 for details.

Set	Items	Description
---	-----	-----
?		
S	(MICROFLUIDIC OR MICROANALYTICAL OR MICROCOLUMN OR MICROCHANNEL OR MICROARRAY OR M	
	2400	MICROFLUIDIC
	1586	MICROANALYTICAL

```

        1556 MICROCOLUMN
        1097 MICROCHANNEL
        33487 MICROARRAY
        5027 MINIATURIZED
        2155 MICROCHIP
        3494 MINIATURIZATION
S1 48715 (MICROFLUIDIC OR MICROANALYTICAL OR MICROCOLUMN OR
        MICROCHANNEL OR MICROARRAY OR MINIATURIZED OR MICROCHIP
        OR MINIATURIZATION)
?
S (SOL-GEL OR SILICA OR SILICATE OR GLASS) (S) (ENTRAPPED OR IMMOBILIZED OR ENCAPSUL
        20 SOL-GEL
        59095 SILICA
        10132 SILICATE
        95166 GLASS
        14509 ENTRAPPED
        91105 IMMOBILIZED
        30874 ENCAPSULATED
        32001 TRAPPED
        4381 DOPED
S2 6563 (SOL-GEL OR SILICA OR SILICATE OR GLASS) (S) (ENTRAPPED
        OR IMMOBILIZED OR ENCAPSULATED OR TRAPPED OR DOPED)
?
S S2 (S) (DNA OR RNA OR PROTEIN? OR CARBOHYDRATE? OR ENZYME? OR BIOMOLECULE?)
Processing
        6563 S2
        2411924 DNA
        1452512 RNA
        4852252 PROTEIN?
        284532 CARBOHYDRATE?
        2254148 ENZYME?
        8975 BIOMOLECULE?
S3 2850 S2 (S) (DNA OR RNA OR PROTEIN? OR CARBOHYDRATE? OR
        ENZYME? OR BIOMOLECULE?)
?
S S2 (S) (ANTIBODIES OR LIPASES)
        6563 S2
        1012573 ANTIBODIES
        9088 LIPASES
S4 354 S2 (S) (ANTIBODIES OR LIPASES)
?
S S3 OR S4
        2850 S3
        354 S4
S5 3021 S3 OR S4
?
S S5 AND S1
        3021 S5
        48715 S1
S6 223 S5 AND S1
?
RD
...examined 50 records (50)
...examined 50 records (100)
...examined 50 records (150)
...examined 50 records (200)
...completed examining records
S7 119 RD (unique items)
?
S S7 NOT PY>2002
        119 S7
        3055239 PY>2002
S8 61 S7 NOT PY>2002
?
S (DIAMETER) (S) (MICRON? OR MICROMETER?)

```

315244 DIAMETER
 90955 MICRON?
 12018 MICROMETER?
 S9 13324 (DIAMETER) (S) (MICRON? OR MICROMETER?)
 ?
 S S8 AND S9
 61 S8
 13324 S9
 S10 0 S8 AND S9
 ?
 S (SOL-GEL) (S) (PARTICULATE? OR PARTICLE?)
 20 SOL-GEL
 80305 PARTICULATE?
 340018 PARTICLE?
 S11 0 (SOL-GEL) (S) (PARTICULATE? OR PARTICLE?)
 ?

Set	Items	Description
S1	48715	(MICROFLUIDIC OR MICROANALYTICAL OR MICROCOLUMN OR MICROCH- ANNEL OR MICROARRAY OR MINIATURIZED OR MICROCHIP OR MINIATURI- ZATION)
S2	6563	(SOL-GEL OR SILICA OR SILICATE OR GLASS) (S) (ENTRAPPED OR IMMOBILIZED OR ENCAPSULATED OR TRAPPED OR DOPED)
S3	2850	S2 (S) (DNA OR RNA OR PROTEIN? OR CARBOHYDRATE? OR ENZYME? OR BIOMOLECULE?)
S4	354	S2 (S) (ANTIBODIES OR LIPASES)
S5	3021	S3 OR S4
S6	223	S5 AND S1
S7	119	RD (unique items)
S8	61	S7 NOT PY>2002
S9	13324	(DIAMETER) (S) (MICRON? OR MICROMETER?)
S10	0	S8 AND S9
S11	0	(SOL-GEL) (S) (PARTICULATE? OR PARTICLE?)
S		(GLASS OR SOL-GEL OR SOLGEL OR SILICATE OR SILICA) (S) (PARTICULATES OR PARTICLES)
	95166	GLASS
	20	SOL-GEL
	59	SOLGEL
	10132	SILICATE
	59095	SILICA
	9530	PARTICULATES
	240311	PARTICLES
S12	8746	(GLASS OR SOL-GEL OR SOLGEL OR SILICATE OR SILICA) (S) (PARTICULATES OR PARTICLES)
S		S8 AND S12
	61	S8
	8746	S12
S13	1	S8 AND S12
T		S13/3,K/ALL

13/3,K/1 (Item 1 from file: 5)
 DIALOG(R)File 5:Biosis Previews(R)
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0011956031 BIOSIS NO.: 199900215691

**Enzymatic flow-injection analysis of metabolites using new type of oxygen
 sensor membranes and phosphorescence phase measurements**

AUTHOR: Ovchinnikov Alexandr N (Reprint); Ogurtsov Vladimir I (Reprint);
 Trettnak Wolfgang; Papkovsky Dmitri B

AUTHOR ADDRESS: Moscow Power Engineering Institute, Krasnokazarmennaia St.
 14, 111250, Moscow, Russia**Russia

JOURNAL: Analytical Letters 32 (4): p701-716 Feb., 1999 1999

MEDIUM: print

ISSN: 0003-2719
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

...ABSTRACT: membrane is positioned in a compact integrated flow-through cell and exposed to the flow stream. Using glucose as a test analyte and glucose oxidase **enzyme** , two different sensor setups were tested: 1) the membrane type biosensor in which the **enzyme** is **immobilized** directly on the oxygen sensor membrane; 2) the **microcolumn** type biosensor in which the **enzyme** is **immobilized** separately, on a microparticle sorbent (controlled pore **glass**) and put into a **microcolumn** with the oxygen sensor membrane placed at the column outlet. In either case a new type of oxygen sensitive material was used, which provides a...

...the existing materials. In this material the oxygen-sensitive coating was applied on a microporous scattering support, the latter comprised of a layer of cellulose **particles** on polyester support. Performance and main working characteristics for the two setups and the new oxygen sensor membranes were investigated and compared.

DESCRIPTORS:
...METHODS & EQUIPMENT: **microcolumn** cell
?

Set	Items	Description
S1	48715	(MICROFLUIDIC OR MICROANALYTICAL OR MICROCOLUMN OR MICROCHANNEL OR MICROARRAY OR MINIATURIZED OR MICROCHIP OR MINIATURIZATION)
S2	6563	(SOL-GEL OR SILICA OR SILICATE OR GLASS) (S) (ENTRAPPED OR IMMOBILIZED OR ENCAPSULATED OR TRAPPED OR DOPED)
S3	2850	S2 (S) (DNA OR RNA OR PROTEIN? OR CARBOHYDRATE? OR ENZYME? OR BIOMOLECULE?)
S4	354	S2 (S) (ANTIBODIES OR LIPASES)
S5	3021	S3 OR S4
S6	223	S5 AND S1
S7	119	RD (unique items)
S8	61	S7 NOT PY>2002
S9	13324	(DIAMETER) (S) (MICRON? OR MICROMETER?)
S10	0	S8 AND S9
S11	0	(SOL-GEL) (S) (PARTICULATE? OR PARTICLE?)
S12	8746	(GLASS OR SOL-GEL OR SOLGEL OR SILICATE OR SILICA) (S) (PARTICULATES OR PARTICLES)
S13	1	S8 AND S12
?		
S		(GLASS OR SOL-GEL OR SOLGEL OR SILICATE OR SILICA) (S) (CRUSH OR CRUSHING OR GRIND
	95166	GLASS
	20	SOL-GEL
	59	SOLGEL
	10132	SILICATE
	59095	SILICA
	12967	CRUSH
	5288	CRUSHING
	497	GRIND
	6763	GRINDING
	232046	PRESS
	50	PULVERIZE
S14	1066	(GLASS OR SOL-GEL OR SOLGEL OR SILICATE OR SILICA) (S) (CRUSH OR CRUSHING OR GRIND OR GRINDING OR PRESS OR PULVERIZE)
?		
S		S8 AND S14
	61	S8
	1066	S14
S15	0	S8 AND S14
?		

Set	Items	Description
S1	48715	(MICROFLUIDIC OR MICROANALYTICAL OR MICROCOLUMN OR MICROCHANNEL OR MICROARRAY OR MINIATURIZED OR MICROCHIP OR MINIATURIZATION)
S2	6563	(SOL-GEL OR SILICA OR SILICATE OR GLASS) (S) (ENTRAPPED OR IMMOBILIZED OR ENCAPSULATED OR TRAPPED OR DOPED)
S3	2850	S2 (S) (DNA OR RNA OR PROTEIN? OR CARBOHYDRATE? OR ENZYME? OR BIOMOLECULE?)
S4	354	S2 (S) (ANTIBODIES OR LIPASES)
S5	3021	S3 OR S4
S6	223	S5 AND S1
S7	119	RD (unique items)
S8	61	S7 NOT PY>2002
S9	13324	(DIAMETER) (S) (MICRON? OR MICROMETER?)
S10	0	S8 AND S9
S11	0	(SOL-GEL) (S) (PARTICULATE? OR PARTICLE?)
S12	8746	(GLASS OR SOL-GEL OR SOLGEL OR SILICATE OR SILICA) (S) (PARTICULATES OR PARTICLES)
S13	1	S8 AND S12
S14	1066	(GLASS OR SOL-GEL OR SOLGEL OR SILICATE OR SILICA) (S) (CRUSH OR CRUSHING OR GRIND OR GRINDING OR PRESS OR PULVERIZE)
S15	0	S8 AND S14
?		
S		(MICRONS OR MICROMETERS) (S) (DIAMETER)
	26300	MICRONS
	4134	MICROMETERS
	315244	DIAMETER
S16	8343	(MICRONS OR MICROMETERS) (S) (DIAMETER)
?		
S		S8 AND S16
	61	S8
	8343	S16
S17	0	S8 AND S16
?		

Set	Items	Description
S1	48715	(MICROFLUIDIC OR MICROANALYTICAL OR MICROCOLUMN OR MICROCHANNEL OR MICROARRAY OR MINIATURIZED OR MICROCHIP OR MINIATURIZATION)
S2	6563	(SOL-GEL OR SILICA OR SILICATE OR GLASS) (S) (ENTRAPPED OR IMMOBILIZED OR ENCAPSULATED OR TRAPPED OR DOPED)
S3	2850	S2 (S) (DNA OR RNA OR PROTEIN? OR CARBOHYDRATE? OR ENZYME? OR BIOMOLECULE?)
S4	354	S2 (S) (ANTIBODIES OR LIPASES)
S5	3021	S3 OR S4
S6	223	S5 AND S1
S7	119	RD (unique items)
S8	61	S7 NOT PY>2002
S9	13324	(DIAMETER) (S) (MICRON? OR MICROMETER?)
S10	0	S8 AND S9
S11	0	(SOL-GEL) (S) (PARTICULATE? OR PARTICLE?)
S12	8746	(GLASS OR SOL-GEL OR SOLGEL OR SILICATE OR SILICA) (S) (PARTICULATES OR PARTICLES)
S13	1	S8 AND S12
S14	1066	(GLASS OR SOL-GEL OR SOLGEL OR SILICATE OR SILICA) (S) (CRUSH OR CRUSHING OR GRIND OR GRINDING OR PRESS OR PULVERIZE)
S15	0	S8 AND S14
S16	8343	(MICRONS OR MICROMETERS) (S) (DIAMETER)
S17	0	S8 AND S16
?		
T		S8/3,K/ALL

8/3,K/1 (Item 1 from file: 155)
 DIALOG(R) File 155:MEDLINE(R)

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14492343 PMID: 10489618

Fabrication of microarray of gel-immobilized compounds on a chip by copolymerization.

Vasiliskov A V; Timofeev E N; Surzhikov S A; Drobyshev A L; Shick V V; Mirzabekov A D

Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia.

BioTechniques (UNITED STATES) Sep 1999, 27 (3) p592-4, 596-8, 600 passim, ISSN 0736-6205 Journal Code: 8306785

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Fabrication of microarray of gel-immobilized compounds on a chip by copolymerization.

The manufacturing of microchips containing oligonucleotides and proteins immobilized within gel pads, ranging in size from 10 x 10 to 100 x 100 microns, is described. The microchips are produced by photo- or persulfate-induced copolymerization of unsaturated derivatives of biomolecules with acrylamide-bisacrylamide mixture. Oligonucleotides containing 5'-allyl or 5'-butenediol units were synthesized using standard phosphoramidite chemistry. Acryloyl residues were attached to a protein by a two-step procedure. Photopolymerization was induced by illumination of the monomer solution containing initiator with UV light through the mask. The mask was...

... microscope. Alternatively, copolymerization was carried out in drops of aqueous solution of monomers containing ammonium persulfate. Drops with different allyl-oligonucleotides were distributed on a glass slide, and the polymerization was induced by diffusion of N,N,N',N'-tetramethylethylenediamine (TEMED) from a hexane solution that covered the aqueous drops.

8/3,K/2 (Item 2 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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14104664 PMID: 9801865

Parallel molecular genetic analysis.

McKenzie S E; Mansfield E; Rappaport E; Surrey S; Fortina P

Department of Pediatrics, Thomas Jefferson University, Philadelphia, PA, USA.

European journal of human genetics - EJHG (ENGLAND) Sep-Oct 1998, 6 (5) p417-29, ISSN 1018-4813 Journal Code: 9302235

Contract/Grant No.: P30-HG00425; HG; NHGRI; P60-HL38632; HL; NHLBI; R01-DK16691; DK; NIDDK; +

Document type: Journal Article; Review; Review, Academic

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

We describe recent progress in parallel molecular genetic analyses using DNA microarrays, gel-based systems, and capillary electrophoresis and utilization of these approaches in a variety of molecular biology assays. These applications include use of polymorphic...

... of genes and disease-associated loci and carrier detection for genetic diseases. Application of these technologies in molecular diagnostics as well as fluorescent technologies in DNA analysis using immobilized oligonucleotide arrays on silicon or glass microchips are discussed. The array-based assays include sequencing by hybridization, cDNA expression

profiling, comparative genome hybridization and genetic linkage analysis. Developments in non **microarray** -based, parallel analyses of mutations and gene expression profiles are reviewed. The promise of and recent progress in capillary array electrophoresis for parallel **DNA** sequence analysis and genotyping is summarized. Finally, a framework for decision making in selecting available technology options for specific molecular genetic analyses is presented.

8/3,K/3 (Item 3 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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14087611 PMID: 9784746

Sanger DNA-sequencing reactions performed in a solid-phase nanoreactor directly coupled to capillary gel electrophoresis.

Soper S A; Williams D C; Xu Y; Lassiter S J; Zhang Y; Ford S M; Bruch R C
Department of Chemistry, Louisiana State University, Baton Rouge
70803-1804, USA.

Analytical chemistry (UNITED STATES) Oct 1 1998, 70 (19) p4036-43,
ISSN 0003-2700 Journal Code: 0370536

Contract/Grant No.: HG01499; HG; NHGRI

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

A **miniaturized** , solid-phase nanoreactor was developed to prepare Sanger **DNA** -sequencing ladders which was directly interfaced to a capillary gel electrophoresis system. A biotinylated fragment of the rat brain actin gene (1 kbp) was amplified by PCR and attached to the interior wall of an (aminoalkyl)silane-derivatized fused- **silica** capillary tube via a biotin/streptavidin/biotin linkage. Coverage of the capillary wall with the biotinylated **DNA** averaged 77 +/- 10%. Stability of the anchored template under pressure (33 nL/s) and electroosmotic flows (11.3 nL/s) were favorable, requiring rinsing for > 150 h to reduce the surface coverage by only 50%. In addition, the **immobilized** template was stable toward temperatures required for preparing sequencing ladders, even under cycling conditions. Standard Sanger dideoxynucleotide termination performed in a large-volume (approximately 8 microL) solid-phase reactor using the thermally stable polymerase **enzymes** Taq and Vent and the polymerases T7 and Bst with off-line slab gel electrophoresis and autoradiographic detection indicated that acceptable fragment generation was achieved...

... the column in a single plug at the beginning of the reaction. A small volume reactor (volume approximately 62 nL) was then used to perform **DNA** polymerase reactions and was coupled directly to a capillary gel column for separation. The capillary reactor was placed inside a thermocycler to control the temperature during chain extension and was directly connected to the gel column via zero dead volume fused- **silica** connectors. The complementary **DNA** fragments generated (C-track only) in the reactor were denatured using heat and directly injected onto the gel-filled capillary for size separation with detection...

8/3,K/4 (Item 4 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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13752080 PMID: 9447591

DNA chips: state-of-the art.

Ramsay G

Wolpert Polymers, Inc., Richmond, VA 23225-4636, USA. ramsayg@aol.com

Nature biotechnology (UNITED STATES) Jan 1998, 16 (1) p40-4, ISSN
1087-0156 Journal Code: 9604648

Document type: Journal Article; Review; Review, Tutorial
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

The technology and applications of microarrays of **immobilized DNA** or oligonucleotides are reviewed. **DNA** arrays are fabricated by high-speed robotics on **glass** or nylon substrates, for which labeled probes are used to determine complementary binding allowing massively parallel gene expression and gene discovery studies. Oligonucleotide microarrays are fabricated either by in situ light-directed combinational synthesis or by conventional synthesis followed by immobilization on **glass** substrates. Sample **DNA** is amplified by the polymerase chain reaction (PCR), and a fluorescent label is inserted and hybridized to the **microarray**. This technology has been successfully applied to the simultaneous expression of many thousands of genes and to large-scale gene discovery, as well as polymorphism screening and mapping of genomic **DNA** clones.

8/3,K/5 (Item 5 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
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13680196 PMID: 9368386

Automated microanalysis using magnetic beads with commercial capillary electrophoretic instrumentation.

Rashkovetsky L G; Lyubarskaya Y V; Foret F; Hughes D E; Karger B L
Barnett Institute, Northeastern University, Boston, MA 02115, USA.
Journal of chromatography. A (NETHERLANDS) Sep 26 1997, 781 (1-2)
p197-204, Journal Code: 9318488

Contract/Grant No.: GM15847; GM; NIGMS

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

The potential of a new **microanalytical** method using magnetic beads (MBs) and commercial capillary electrophoresis (CE) instrumentation for performing enzymatic and inhibition assays, as well as for analysis of biological molecules such as antigens, substrates, etc., has been explored. A small quantity of magnetic beads containing **immobilized biomolecules** was injected into a neutral hydrophilic-coated fused- **silica** capillary. The short plug (2-3 mm) of beads was held fixed by a magnet placed in the cartridge of the CE system, without the...

... used to demonstrate the SI procedure for enzymatic and inhibition assays. The second protocol, SI/ITP, was employed to quantitate an antigen (mouse mAB) using **antibodies** (sheep IgG towards mouse AB) **immobilized** on the beads. The MB-CE method, requiring only femtomole (fmol) quantities of material, can potentially be employed in diagnostic and forensic assays, kinetic studies...

8/3,K/6 (Item 6 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
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13487717 PMID: 9172361

Oligonucleotide microchips as genosensors for determinative and environmental studies in microbiology.

Guschin D Y; Mobarry B K; Proudnikov D; Stahl D A; Rittmann B E; Mirzabekov A D

Joint Human Genome Program, Argonne National Laboratory, Illinois 60439, USA.

Applied and environmental microbiology (UNITED STATES) Jun 1997, 63
(6) p2397-402, ISSN 0099-2240 Journal Code: 7605801

Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

The utility of parallel hybridization of environmental nucleic acids to many oligonucleotides **immobilized** in a matrix of polyacrylamide gel pads on a **glass** slide (oligonucleotide **microchip**) was evaluated. Oligonucleotides complementary to small-subunit rRNA sequences of selected microbial groups, encompassing key genera of nitrifying bacteria, were shown to selectively retain labeled target nucleic acid derived from either **DNA** or **RNA** forms of the target sequences. The utility of varying the probe concentration to normalize hybridization signals and the use of multicolor detection for simultaneous quantitation...

8/3,K/7 (Item 7 from file: 155)
DIALOG(R) File 155:MEDLINE(R)
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13427168 PMID: 9099858

Sequence analysis by hybridization with oligonucleotide microchip : identification of beta-thalassemia mutations.

Drobyshev A; Mologina N; Shik V; Pobedimskaya D; Yershov G; Mirzabekov A
Joint Human Genome Program: Engelhardt Institute of Molecular Biology, Moscow, Russia.

Gene (NETHERLANDS) Mar 25 1997, 188 (1) p45-52, ISSN 0378-1119
Journal Code: 7706761

Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Sequence analysis by hybridization with oligonucleotide microchip : identification of beta-thalassemia mutations.

Diagnostics for genetic diseases were run and sequence analysis of **DNA** was carried out by hybridization of **RNA** transcripts with oligonucleotide array microchips. Polyacrylamide gel pads (100 x 100 x 20 microm) were fixed on a **glass** slide of the **microchip** and contained allele-specific **immobilized** oligonucleotides (10-mers). The **RNA** transcripts of PCR-amplified genomic **DNA** were fluorescently labeled by enzymatic or chemical methods and hybridized with the microchips. The simultaneous measurement in real time of the hybridization and melting on...

... monitoring of the hybridization specificity for duplexes with different stabilities and AT content was enhanced by its measurement at optimal, discrimination temperatures on melting curves. **Microchip** diagnostics were optimized by choosing the proper allele-specific oligonucleotides from among the set of overlapping oligomers. The accuracy of mutation detection can be increased by simultaneous hybridization of the **microchip** with two differently labeled samples and by parallel monitoring their hybridization with a multi-wavelength fluorescence microscope. The efficiency and reliability of the sequence analysis...

8/3,K/8 (Item 8 from file: 155)
DIALOG(R) File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.

12956823 PMID: 8643503

DNA analysis and diagnostics on oligonucleotide microchips.

Yershov G; Barsky V; Belgovskiy A; Kirillov E; Kreindlin E; Ivanov I; Parinov S; Guschin D; Drobishev A; Dubiley S; Mirzabekov A
Joint Human Genome Program: Engelhardt Institute of Molecular Biology, Moscow, Russia.

Proceedings of the National Academy of Sciences of the United States of America (UNITED STATES) May 14 1996, 93 (10) p4913-8, ISSN 0027-8424
Journal Code: 7505876
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... sequencing by hybridization to oligonucleotide microchips (SHOM) and its application to diagnostics for genetic diseases. A robot has been constructed to manufacture sequencing "microchips." The **microchip** is an array of oligonucleotides **immobilized** into gel elements fixed on a **glass** plate. Hybridization of the **microchip** with fluorescently labeled **DNA** was monitored in real time simultaneously for all **microchip** elements with a two-wavelength fluorescent microscope equipped with a charge-coupled device camera. SHOM has been used to detect beta-thalassemia mutations in patients by hybridizing PCR-amplified **DNA** with the microchips. A contiguous stacking hybridization technique has been applied for the detection of mutations; it can simplify medical diagnostics and enhance its reliability...

8/3,K/9 (Item 9 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.

12124304 PMID: 12454178
Identification of Listeria species by microarray -based assay.
Volokhov Dmitriy; Rasooly Avraham; Chumakov Konstantin; Chizhikov Vladimir
Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland 20740-3835, USA.
Journal of clinical microbiology (United States) Dec 2002, 40 (12) p4720-8, ISSN 0095-1137 Journal Code: 7505564
Document type: Evaluation Studies; Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Identification of Listeria species by microarray -based assay.
We have developed a rapid **microarray** -based assay for the reliable detection and discrimination of six species of the *Listeria* genus: *L. monocytogenes*, *L. ivanovii*, *L. innocua*, *L. welshimeri*, *L. seeligeri*...

... one-tube multiplex PCR amplification of six target bacterial virulence factor genes (*iap*, *hly*, *inlB*, *plcA*, *plcB*, and *clpE*), synthesis of fluorescently labeled single-stranded **DNA**, and hybridization to the multiple individual oligonucleotide probes specific for each *Listeria* species and **immobilized** on a **glass** surface. Results of the **microarray** analysis of 53 reference and clinical isolates of *Listeria* spp. demonstrated that this method allowed unambiguous identification of all six *Listeria* species based on sequence...

... be positive for the *inlB*, *plcA*, *plcB*, and *clpE* virulence genes specific only to this species. Our data on *Listeria* species analysis demonstrated that this **microarray** technique is a simple, rapid, and robust genotyping method that is also a potentially valuable tool for identification and characterization of bacterial pathogens in general.

8/3,K/10 (Item 10 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.

12104366 PMID: 12433105

A microarray immunoassay for simultaneous detection of proteins and bacteria.

Delehanty James B; Ligler Frances S Ligler F S Naval Res Lab, Washington, DC

Center for Bio/Molecular Science & Engineering, Naval Research Laboratory, Washington, DC 20375-5348, USA.

Analytical chemistry (United States) Nov 1 2002, 74 (21) p5681-7, ISSN 0003-2700 Journal Code: 0370536

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

A microarray immunoassay for simultaneous detection of proteins and bacteria.

We report the development and characterization of an antibody microarray biosensor for the rapid detection of both protein and bacterial analytes under flow conditions. Using a noncontact microarray printer, biotinylated capture antibodies were immobilized at discrete locations on the surface of an avidin-coated glass microscope slide. Preservation of capture antibody function during the deposition process was accomplished with the use of a low-salt buffer containing sucrose and bovine...

...channel flow module that conducted analyte-containing solutions over the array of capture antibody microspots. Detection of bound analyte was subsequently achieved using fluorescent tracer antibodies. The pattern of fluorescent complexes was interrogated using a scanning confocal microscope equipped with a 635-nm laser. This microarray system was employed to detect protein and bacterial analytes both individually and in samples containing mixtures of analytes. Assays were completed in 15 min, and detection of cholera toxin, staphylococcal enterotoxin...

8/3,K/11 (Item 11 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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12093988 PMID: 12421560

Specificity of mammalian Y-box binding protein p50 in interaction with ss and ds DNA analyzed with generic oligonucleotide microchip.

Zasedateleva O A; Krylov A S; Prokopenko D V; Skabkin M A; Ovchinnikov L P; Kolchinsky A; Mirzabekov A D

Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, 32 Vavilov Street, 119991 Moscow, Russian Federation.

Journal of molecular biology (England) Nov 15 2002, 324 (1) p73-87, ISSN 0022-2836 Journal Code: 2985088R

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Specificity of mammalian Y-box binding protein p50 in interaction with ss and ds DNA analyzed with generic oligonucleotide microchip.

p50 protein is a member of the Y-box binding transcription factor family and is a counterpart of YB-1 protein. The generic microchip was used to analyze the sequence specificity of p50 binding to single (ss) and double-stranded (ds) oligodeoxyribonucleotides. The generic microchip contained 4,096 single-stranded octadeoxyribonucleotides in which all possible core 6-mers (4(6)=4,096) were flanked at their 3' and 5'-ends with degenerated nucleotides. The oligonucleotides were chemically immobilized within polyacrylamide gel pads fixed on a glass slide. The binding of p50 to the generic microchip was shown to be the most specific to ss GGGG motif and then to ss CACC and CATC motifs. GC-rich ds oligonucleotides of the generic microchip, and particularly those containing GGTG/CACC,

GATG/CATC, and GTGG/CCAC heterogeneous motifs, were most efficiently destabilized due to interaction with p50. Gel-shift electrophoresis has shown that the **protein** exhibits much higher binding specificity to 24-mer oligoA-TGGGGG-oligoA containing G-rich 6-mer, in comparison with 24-mer oligoA-AAATAT-oligoA carrying A,T-rich 6-mer in full correspondence with the data obtained with the **microchip**. Studies of **DNA** -binding proteins using gel-immobilized ss and ds DNA fragments provide a unique possibility to detect low-affinity complexes of these **proteins** with short sequence motifs and assess the role of these motifs in sequence-specific interactions with long recognition sites.

8/3,K/12 (Item 12 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

(c) format only 2005 The Dialog Corp. All rts. reserv.

12086367 PMID: 12413459

Toward optimized antibody microarrays: a comparison of current microarray support materials.

Angenendt Philipp; Glokler Jorn; Murphy Derek; Lehrach Hans; Cahill Dolores J

Max Planck Institute for Molecular Genetics, Ihnestrass 73, 14195 Berlin, Germany.

Analytical biochemistry (United States) Oct 15 2002, 309 (2) p253-60

, ISSN 0003-2697 Journal Code: 0370535

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Toward optimized antibody microarrays: a comparison of current microarray support materials.

With the advent of **protein** and antibody **microarray** technology several different coatings and protocols have been published, which may be broadly divided into two types: gel-coated surfaces and plain non-gel-coated **glass** or plastic surfaces, some with chemical groups attached. We have screened 11 different array surfaces of both types and compared them with respect to their detection limit, inter- and intrachip variation, and storage characteristics. Five different **antibodies** were **immobilized** onto each type of **microarray** support, with total **protein** concentrations ranging from 40 fmol to 25 amol per spot. From these results, it was seen that some **antibodies** were more suited for use on antibody arrays. All measurements were performed in quadruplicate, and the results revealed high signal uniformity and reproducibility of most plain **glass** and plastic slides. Lower detection limits were obtained with polyacrylamide-coated slides, making them more suitable for the detection of very low concentrations of antigen. All **microarray** coatings could be stored for a period of 8 weeks; however, improved results were seen after 2 weeks of storage. In conclusion, the results indicate the need to test each antibody to be used on an antibody array and to select the **microarray** coating based on experimental requirements.

8/3,K/13 (Item 13 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

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12085479 PMID: 12412130

A miniaturized multichamber solution isoelectric focusing device for separation of protein digests.

Tan Aimin; Pashkova Anna; Zang Li; Foret Frantisek; Karger Barry L

Barnett Institute and Department of Chemistry, Northeastern University, 360 Huntington Avenue, Boston, MA 02115, USA.

Electrophoresis (Germany) Oct 2002, 23 (20) p3599-607, ISSN 0173-0835 Journal Code: 8204476

Contract/Grant No.: GM 15847; GM; NIGMS
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

A miniaturized multichamber solution isoelectric focusing device for separation of protein digests.

A miniaturized multichamber device was constructed for solution isoelectric focusing (IEF) separation of complex peptide mixtures. The system, based on immobilized pH gels, consisted of 96 minichambers (approximately 75 nL each) arranged in eight rows. Neighboring chambers in a given row were separated by short glass tubes (4 mm inner diameter, 3 mm long), within which Immobiline gels of specific pH values were polymerized. During focusing, the device was sandwiched between...

... multiple samples could be simultaneously fractionated, each separated into 12 fractions of various pI ranges. A variety of standard peptide mixtures and tryptic digests of proteins were separated by IEF using this device, and the fractions were characterized by mass spectrometry. For a codigested nine-protein mixture, both the total number of peptides identified and the average sequence coverage were similar to the results of ion-exchange chromatography (IEC), according to...

... an additional separation liquid chromatography, capillary electrophoresis (LC, CE) or mass spectrometry (MS) detection without additional sample cleanup. High loading capacity was achieved for the miniaturized multichamber IEF device. Importantly, a linear correlation was found between the experimentally determined and calculated pI values of peptides.

; Acrylamides--chemistry--CH; Chromatography, Ion Exchange; Chromatography, Liquid; Gels--chemistry--CH; Isoelectric Focusing--methods--MT; Miniaturization ; Peptide Fragments--isolation and purification--IP; Proteomics--methods--MT

8/3,K/14 (Item 14 from file: 155)
DIALOG(R) File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.

12038892 PMID: 12359098

A method for evaluation of the quality of DNA microarray spots.

Boa Zhang; Ma Wen-Li; Hu Zi-You; Rong Shi; Shi Yan-Bin; Zheng Wen-Ling
Department of Biochemistry, First Military Medical University, Guangzhou 510515, PR China.

Journal of biochemistry and molecular biology (Korea (South)) Sep 30 2002, 35 (5) p532-5, ISSN 1225-8687 Journal Code: 9702084

Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

A method for evaluation of the quality of DNA microarray spots.

To establish a method to evaluate the quality of the printed microarray and DNA fragments' immobilization. The target gene fragments that were made with the restriction display PCR (RD-PCR) technique were printed on a superamine modified glass slide, then immobilized with UV cross-linking and heat. This chip was hybridized with universal primers that were labeled with cy3-dUTP, as well as cDNA that was...

8/3,K/15 (Item 15 from file: 155)
DIALOG(R) File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.

11977048 PMID: 12191932

A label-free optical technique for detecting small molecule interactions.

Lin Bo; Qiu Jean; Gerstenmeier John; Li Peter; Pien Homer; Pepper Jane; Cunningham Brian

SRU Biosystems, 14A Gill Street, Woburn, MA 01801, USA.

Biosensors & bioelectronics (England) Sep 2002, 17 (9) p827-34,

ISSN 0956-5663 Journal Code: 9001289

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

... The detection technique is capable of detecting the addition and removal of small molecules as they interact with receptor molecules on the sensor surface or **enzymes** in the solution surrounding the sensor. Two assays are presented to exemplify the detection of small molecule interactions with the biosensor. First, an avidin receptor...

... to detect 244 Da biotin binding. Second, a protease assay is performed in which a 136 Da p-nitroanilide (pNA) moiety is cleaved from an **immobilized** substrate. Because the sensor structure can be embedded in the plastic surfaces of microtiter plates or the **glass** surfaces of **microarray** slides, it is expected that this technology will be most useful in applications where large numbers of biomolecular interactions are measured in parallel, particularly when molecular labels will alter or inhibit the functionality of the molecules under study. Screening of pharmaceutical compound libraries with **protein** targets, and **microarray** screening of **protein** - **protein** interactions for proteomics are examples of applications that require the sensitivity and throughput afforded by this approach.

8/3,K/16 (Item 16 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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11967287 PMID: 12180686

DNA microarray technology used for studying foodborne pathogens and microbial habitats: minireview.

Al-Khalidi Sufian F; Martin Scott A; Rasooly Avraham; Evans Jeff D

U.S. Food and Drug Administration, CFSAN, Division of Microbiological Studies, College Park, MD 20740-3855, USA. Sufian.Al-Khalidi@cfstan.fda.gov

Journal of AOAC International (United States) Jul-Aug 2002, 85 (4) p906-10, ISSN 1060-3271 Journal Code: 9215446

Document type: Journal Article; Review; Review, Tutorial

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

DNA microarray technology used for studying foodborne pathogens and microbial habitats: minireview.

Microarray analysis is an emerging technology that has the potential to become a leading trend in bacterial identification in food and feed improvement. The technology uses fluorescent-labeled probes amplified from bacterial samples that are then hybridized to thousands of **DNA** sequences

immobilized on chemically modified **glass** slides. The whole gene or open reading frame(s) is represented by a polymerase chain reaction fragment of double-strand **DNA**, approximately 1000 base pair (bp) or 20-70 bp single-strand oligonucleotides. The technology can be used to identify bacteria and to study gene expression in complex microbial populations, such as those found in food and gastrointestinal tracts. Data generated by

microarray analysis can be potentially used to improve the safety of our food supply as well as ensure the efficiency of animal feed conversion to human food, e.g., in meat and milk production by ruminants. This minireview addresses the use of **microarray** technology in bacterial identification

and gene expression in different microbial systems and in habitats containing mixed populations of bacteria.

8/3,K/17 (Item 17 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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11963395 PMID: 12173458

[Biological microchips with hydrogel-immobilized nucleic acids, proteins, and other compounds: properties and applications in genomics]

Biologicheskie mikrochipy, soderzhashchie immobilizovannye v gidrogele nukleinovye kisloty, belki i drugie soedineniia: svoistva i prilozheniia v genomike.

Barskii B E; Kolchinskii A M; Lysov Iu P; Murzabekov A D

Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, 119991 Russia.

Molekuliarnaia biologiiia (Russia) Jul-Aug 2002, 36 (4) p563-84,
ISSN 0026-8984 Journal Code: 0105454

Document type: Journal Article; Review; Review, Tutorial ; English
Abstract

Languages: RUSSIAN

Main Citation Owner: NLM

Record type: Completed

The MAGIChip (MicroArrays of Gel- Immobilized Compounds on a chip) consists of an array of hydrophilic gel pads fixed on a hydrophobic glass surface. These pads of several picoliters to several nanoliters in volume contain the gel- immobilized nucleic acids, proteins , and other compounds, as well as live cells. They are used to conduct chemical and enzymatic reactions with the immobilized compounds or samples bound to them. In the latter case, nucleic acid fragments can be hybridized, modified, and fractionated within the gel pads. The main...

... analyze nucleic acid sequences (PCR, detachment of primers and PCR-amplified products from a substrate, hybridization, ligation, and others) can be also performed within the microchip pads. A flexible, multipurpose, and inexpensive system has been developed to register the processes proceeding on a microchip . The system provides unique possibilities for research and biomedical applications, allowing one to register both equilibrium states and the course of reaction in real time. The system is applied to analyze both kinetic and thermodynamic characteristics of molecular interaction in the duplexes formed between nucleic acids and the probes immobilized within the microchip gel pads. Owing to the effect of stacking interaction of nucleic acids, the use of short oligonucleotides extends the possibilities of microchips for analysis of...

... characterize the genes of pathogenic bacteria responsible for drug resistance, and to study translocations in the human genome. On the basis of the MAGIChip, the protein microchips have been created, containing the immobilized antibodies , antigens, enzymes , and many other substances, as well as the microchips with the gel immobilized live cells.

8/3,K/18 (Item 18 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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11937946 PMID: 12141657

Microfluidic enzyme immunoassay using silicon microchip with immobilized antibodies and chemiluminescence detection.

Yakovleva Julia; Davidsson Richard; Lobanova Anna; Bengtsson Martin; Eremin Sergei; Laurell Thomas; Emneus Jenny

Department of Chemistry, M.V. Lomonosov, Moscow State University, Russia.

Analytical chemistry (United States) Jul 1 2002, 74 (13) p2994-3004,
ISSN 0003-2700 Journal Code: 0370536
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Microfluidic enzyme immunoassay using silicon microchip with immobilized antibodies and chemiluminescence detection.

Silicon microchips with immobilized antibodies were used to develop microfluidic enzyme immunoassays using chemiluminescence detection and horseradish peroxidase (HRP) as the enzyme label. Polyclonal anti-atrazine antibodies were coupled to the silicon microchip surface with an overall dimension of 13.1 x 3.2 mm, comprising 42 porous flow channels of 235-microm depth and 25-microm width. Different immobilization protocols based on covalent or noncovalent modification of the silica surface with 3-aminopropyltriethoxysilane (APTES) or 3-glycidoxypropyltrimethoxysilane (GOPS), linear polyethylenimine (LPEI, MW 750,000), or branched polyethylenimine (BPEI, MW 25,000), followed by adsorption or covalent attachment of the antibody, were evaluated to reach the best reusability, stability, and sensitivity of the microfluidic enzyme immunoassay (microFEIA). Adsorption of antibodies on a LPEI-modified silica surface and covalent attachment to physically adsorbed BPEI lead to unstable antibody coatings. Covalent coupling of antibodies via glutaraldehyde (GA) to three different functionalized silica surfaces (APTES-GA, LPEI-GA, and GOPS-BPEI-GA) resulted in antibody coatings that could be completely regenerated using 0.4 M glycine/HCl, pH...

8/3,K/19 (Item 19 from file: 155)
DIALOG(R) File 155:MEDLINE(R)
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11893841 PMID: 12089254

Detection and genotyping of human group A rotaviruses by oligonucleotide microarray hybridization.

Chizhikov V; Wagner M; Ivshina A; Hoshino Y; Kapikian A Z; Chumakov K
Laboratory of Method Development, Center for Biologics Evaluation and Research, Food and Drug Administration, Kensington, Maryland 20895, USA.
chizhikov@cber.fda.gov

Journal of clinical microbiology (United States) Jul 2002, 40 (7)
p2398-407, ISSN 0095-1137 Journal Code: 7505564
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Detection and genotyping of human group A rotaviruses by oligonucleotide microarray hybridization.

A rapid and reliable method for the identification of five clinically relevant G genotypes (G1 to G4 and G9) of human rotaviruses based on oligonucleotide microarray hybridization has been developed. The genotype-specific oligonucleotides immobilized on the surface of glass slides were selected to bind to the multiple target regions within the VP7 gene that are highly conserved among individual rotavirus genotypes. Rotavirus cDNA was...

...of rotavirus genotype was based on hybridization with several individual genotype-specific oligonucleotides. This approach combines the high sensitivity of PCR with the selectivity of DNA - DNA hybridization. The specificity of oligonucleotide microchip hybridization was evaluated by testing 20 coded rotavirus isolates from different geographic areas for which genotypes were previously determined by conventional methods. Analysis of the coded specimens showed that this microarray -based method

is capable of unambiguous identification of all rotavirus strains. Because of the presence of random mutations, each individual virus isolate produced a unique hybridization pattern capable of distinguishing different isolates of the same genotype and, therefore, subgenotype differentiation. This strain information indicates one of several advantages that **microarray** technology has over conventional PCR techniques.

8/3,K/20 (Item 20 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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11700755 PMID: 11875429

Carbohydrate microarrays for the recognition of cross-reactive molecular markers of microbes and host cells.

Wang Denong; Liu Shaoyi; Trummer Brian J; Deng Chao; Wang Aili
Functional Genomics Division, Columbia Genome Center, College of Physicians and Surgeons, Columbia University, 1150 St. Nicholas Avenue, New York, NY 10032, USA. dw8@columbia.edu

Nature biotechnology (United States) Mar 2002, 20 (3) p275-81,
ISSN 1087-0156 Journal Code: 9604648

Contract/Grant No.: AI 45326; AI; NIAID

Comment in Nat Biotechnol. 2002 Mar;20(3) 234-5; Comment in PMID 11875419

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

We describe here the development of a **carbohydrate** -based **microarray** to extend the scope of biomedical research on **carbohydrate** -mediated molecular recognition and anti-infection responses. We have demonstrated that microbial polysaccharides can be **immobilized** on a surface-modified **glass** slide without chemical conjugation. With this procedure, a large repertoire of microbial antigens (approximately 20,000 spots) can be patterned on a single micro- **glass** slide, reaching the capacity to include most common pathogens. Glycoconjugates of different structural characteristics are shown here to be applicable for **microarray** fabrication, extending the repertoires of diversity and complexity of **carbohydrate** microarrays. The printed microarrays can be air-dried and stably stored at room temperature for long periods of time. In addition, the system is highly sensitive, allowing simultaneous detection of a broad spectrum of antibody specificities with as little as a few microliters of serum specimen. Finally, the potential of **carbohydrate** microarrays is demonstrated by the discovery of previously undescribed cellular markers, Dex-Ids.

8/3,K/21 (Item 21 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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11605689 PMID: 11779093

Recent advances in DNA microarrays.

Nakanishi T; Oka T; Akagi T
Department of Biochemistry and Molecular Dentistry, and Okayama University Graduate School of Medicine and Dentistry, Japan.
naka3285@md.okayama-u.ac.jp

Acta medica Okayama (Japan) Dec 2001, 55 (6) p319-28, ISSN
0386-300X Journal Code: 0417611

Document type: Journal Article; Review; Review, Tutorial

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

...is almost completely elucidated and the life sciences will now aim for

a general and integrated study of gene expressions and the functional elucidation of **proteins**. In such a study, various new techniques have been developed, and **DNA microarray** technology is the most representative one. As for the **DNA microarray** techniques, several thousands to tens of thousands of gene segments are **immobilized** on a **glass** slide at high density, and cDNA probes prepared from specific cells or tissues are hybridized on the slides from which gene expression profiles are obtained...

8/3,K/22 (Item 22 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

(c) format only 2005 The Dialog Corp. All rts. reserv.

11552232 PMID: 11722542

Optimization of an oligonucleotide microchip for microbial identification studies: a non-equilibrium dissociation approach.

Liu W T; Mirzabekov A D; Stahl D A Stahl D A U WA, Seattle
Environmental Health Engineering Program, Department of Civil
Engineering, Northwestern University, Evanston, IL 60208, USA.
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Environmental microbiology (England) Oct 2001, 3 (10) p619-29,
ISSN 1462-2912 Journal Code: 100883692

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Optimization of an oligonucleotide microchip for microbial identification studies: a non-equilibrium dissociation approach.

The utility of a high-density oligonucleotide **microarray** (**microchip**) for identifying strains of five closely related bacilli (*Bacillus anthracis*, *Bacillus cereus*, *Bacillus mycoides*, *Bacillus medusa* and *Bacillus subtilis*) was demonstrated using an approach that...

... equilibrium dissociation rates ('melting curves') of all probe-target duplexes simultaneously. For this study, a hierarchical set of 30 oligonucleotide probes targeting the 16S ribosomal **RNA** of these bacilli at multiple levels of specificity (approximate taxonomic ranks of domain, kingdom, order, genus and species) was designed and **immobilized** in a high-density matrix of gel pads on a **glass** slide. Reproducible melting curves for probes with different levels of specificity were obtained using an optimized salt concentration. Clear discrimination between perfect match (PM) and...

8/3,K/23 (Item 23 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

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11446746 PMID: 11553465

APEX disease gene resequencing: mutations in exon 7 of the p53 tumor suppressor gene.

Shumaker J M; Tollet J J; Filbin K J; Montague-Smith M P; Pirrung M C
Department of Molecular and Human Genetics, Baylor College of Medicine,
Houston, TX 77030, USA.

Bioorganic & medicinal chemistry (England) Sep 2001, 9 (9) p2269-78,
ISSN 0968-0896 Journal Code: 9413298

Contract/Grant No.: GM 46720; GM; NIGMS

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

... detecting mutations at the single nucleotide level are required in highly mutated genes such as the tumor suppressor p53. Resequencing of an

individual patient's DNA by conventional Sanger methods is impractical, calling for novel methods for sequence analysis. Toward this end, an arrayed primer extension (APEX) method for identifying sequence alterations in primary DNA structure was developed. A two-dimensional array of immobilized primers (DNA chip) was fabricated to scan p53 exon 7 by single bases. Primers were immobilized with 200 microm spacing on a glass support. Oligonucleotide templates of length 72 were used to study individual APEX resequencing reactions. A template-dependent DNA polymerase extension was performed on the chip using fluorescein-labeled dideoxynucleotides (ddNTPs). Labeled primers were evanescently excited and the induced fluorescence was imaged by CCD. The average signal-to-noise ratio (S/N) observed was 30:1. Software was developed to analyze high-density DNA chips for sequence alterations. Deletion, insertion, and substitution mutations were detected. APEX can be used to scan for any mutation (up to two-base insertions) in a known region of DNA by fabricating a DNA chip comprising complementary primers addressing each nucleotide in the wild-type sequence. Since APEX is a parallel method for determining DNA sequence, the time required to assay a region is independent of its length. APEX has a high level of accuracy, is sequence-based, and can be miniaturized to analyze a large DNA region with minimal reagents.

8/3,K/24 (Item 24 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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11383000 PMID: 11476241

Electrokinetically driven microfluidic chips with surface-modified chambers for heterogeneous immunoassays.

Dodge A; Fluri K; Verpoorte E; de Rooij N F

Sensors, Actuators and Microsystems Laboratory, Institute of Microtechnology, University of Neuchatel, Switzerland.

Analytical chemistry (United States) Jul 15 2001, 73 (14) p3400-9,
ISSN 0003-2700 Journal Code: 0370536

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Electrokinetically driven microfluidic chips with surface-modified chambers for heterogeneous immunoassays.

This article presents the first example of a microfluidic chip for heterogeneous bioassays using a locally immobilized biospecific layer and operated electrokinetically. The reaction chamber has picoliter dimensions and is integrated into a network of microchannels etched in glass. The high affinity of protein A (PA) for rabbit immunoglobulin G (rIgG) was exploited for chip testing, with PA being immobilized on microchannel walls and fluorescently labeled (Cy5) rIgG serving as sample. It was possible to operate the chip in an immunoaffinity chromatographic manner, using electrokinetically pumped solutions...

... using both a combined sample/tracer incubation and sequential addition of these solutions. With assay times generally below 5 min for this unoptimized device, the microfluidic approach described shows great potential for many high-throughput screening applications.

8/3,K/25 (Item 25 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

(c) format only 2005 The Dialog Corp. All rts. reserv.

11336244 PMID: 11425749

Microarray analysis of microbial virulence factors.

Chizhikov V; Rasooly A; Chumakov K; Levy D D
Food and Drug Administration Center for Biologics Evaluation and
Research, Rockville, Maryland, USA.
Applied and environmental microbiology (United States) Jul 2001, 67
(7) p3258-63, ISSN 0099-2240 Journal Code: 7605801
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Microarray analysis of microbial virulence factors.

... discrimination among strains of Escherichia coli and other pathogenic enteric bacteria harboring various virulence factors. Oligonucleotide microchips are miniature arrays of gene-specific oligonucleotide probes immobilized on a glass surface. The combination of this technique with the amplification of genetic material by PCR is a powerful tool for the detection of and simultaneous discrimination...

... virulence factors of bacterial strains was monitored by multiplex PCR followed by hybridization of the denatured PCR product to the gene-specific oligonucleotides on the microchip. The assay was able to detect these virulence factors in 15 Salmonella, Shigella, and E. coli strains. The results of the chip analysis were confirmed by hybridization of radiolabeled gene-specific probes to genomic DNA from bacterial colonies. In contrast, gel electrophoretic analysis of the multiplex PCR products used for the microarray analysis produced ambiguous results due to the presence of unexpected and uncharacterized bands. Our results suggest that microarray analysis of microbial virulence factors might be very useful for automated identification and characterization of bacterial pathogens.

8/3,K/26 (Item 26 from file: 155)
DIALOG(R) File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.

11275059 PMID: 11353531

Peptide and small molecule microarray for high throughput cell adhesion and functional assays.

Falsey J R; Renil M; Park S; Li S; Lam K S
UC Davis Cancer Center, Division of Hematology/Oncology, and Department of Internal Medicine, University of California Davis, 4501 X Street, Sacramento, California 95817, USA.

Bioconjugate chemistry (United States) May-Jun 2001, 12 (3) p346-53, ISSN 1043-1802 Journal Code: 9010319

Contract/Grant No.: CA78868; CA; NCI; CA78909; CA; NCI; CA86364; CA; NCI

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Peptide and small molecule microarray for high throughput cell adhesion and functional assays.

A novel class of chemical microchips consisting of glass microscope slides was prepared for the covalent attachment of small molecule ligands and peptides through site-specific oxime bond or thiazolidine ring ligation reaction. Commercially...

... group or a 1,2-amino-thiol group (e.g., cysteine with a free N(alpha)-amino group) were printed onto these slides using a DNA

microarray spotter. After chemical ligation, the microarray of immobilized ligands was analyzed with three different biological assays: (1) protein-binding assay with fluorescence detection, (2) functional phosphorylation assay using [gamma(33)P]-ATP and specific protein kinase to label peptide substrate spots, and (3) adhesion assay with intact cells. In the cell adhesion assay, not only can we determine the binding specificity of the peptide against different cell lines, we can also

determine functional cell signaling of attached cells using immunofluorescence techniques in situ on the **microchip**. This chemical **microchip** system enables us to rapidly analyze the functional properties of numerous ligands that we have identified from the "one-bead one-compound" combinatorial library method.

8/3,K/27 (Item 27 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

(c) format only 2005 The Dialog Corp. All rts. reserv.

11246532 PMID: 11320503

Stable sol-gel microstructured and microfluidic networks for protein patterning.

Kim Y D; Park C B; Clark D S

Department of Chemical Engineering, University of California, 110-C Gilman Hall, Berkeley, CA 94720, USA.

Biotechnology and bioengineering (United States) Jun 5 2001, 73 (5) p331-7, ISSN 0006-3592 Journal Code: 7502021

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Stable sol-gel microstructured and microfluidic networks for protein patterning.

We demonstrate the formation of micropatterned sol-gel structures containing active **proteins** by patterning with polydimethylsiloxane (PDMS) microchannels. To transport sol solution efficiently into the hydrophobic PDMS microchannels, a hydrophilic-hydrophobic block copolymer was used to impart hydrophilicity to the PDMS microchannels. Poor adhesion of the micropatterned gel structure onto **glass** slides was improved by treating the **glass** surface with a polymeric substrate. To minimize cracks in the gel microstructure, hybrid matrices of interpenetrating organic and inorganic networks were prepared containing the reactive organic moieties polyvinylalcohol or polyvinylpyrrolidone. Retention of biochemical activity within the micropatterned gel was demonstrated by performing immunobinding assays with **immobilized** immunoglobulin G (IgG) antibody. The potential application of microfluidics technology to **immobilized - enzyme** biocatalysis was demonstrated using PDMS-patterned microchannels filled with trypsin-containing sol-gels. This work provides a foundation for the microfabrication of functional **protein** chips using sol-gel processes. Copyright 2001 John Wiley & Sons, Inc.

8/3,K/28 (Item 28 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

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11161777 PMID: 11157263

Portable system for microbial sample preparation and oligonucleotide microarray analysis.

Bavykin S G; Akowski J P; Zakhariev V M; Barsky V E; Perov A N; Mirzabekov A D

BioChip Technology Center, Argonne National Laboratory, Argonne, Illinois 60439, USA.

Applied and environmental microbiology (United States) Feb 2001, 67 (2) p922-8, ISSN 0099-2240 Journal Code: 7605801

Document type: Evaluation Studies; Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Portable system for microbial sample preparation and oligonucleotide microarray analysis.

We have developed a three-component system for microbial identification that consists of (i) a universal syringe-operated **silica** minicolumn for successive **DNA** and **RNA** isolation, fractionation, fragmentation, fluorescent labeling, and removal of excess free label and short oligonucleotides; (ii) microarrays of **immobilized** oligonucleotide probes for 16S rRNA identification; and (iii) a portable battery-powered device for imaging the hybridization of fluorescently labeled **RNA** fragments with the arrays. The minicolumn combines a guanidine thiocyanate method of nucleic acid isolation with a newly developed hydroxyl radical-based technique for **DNA** and **RNA** labeling and fragmentation. **DNA** and **RNA** can also be fractionated through differential binding of double- and single-stranded forms of nucleic acids to the **silica**. The procedure involves sequential washing of the column with different solutions. No vacuum filtration steps, phenol extraction, or centrifugation is required. After hybridization, the overall...

... coli, *Bacillus subtilis*, *Bacillus thuringiensis*, and human HL60 cells. The procedure is rapid: beginning with whole cells, it takes approximately 25 min to obtain labeled **DNA** and **RNA** samples and an additional 25 min to hybridize and acquire the **microarray** image using a stationary image analysis system or the portable imager.

8/3,K/29 (Item 29 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.

10739903 PMID: 10860511

A fiber-optic microarray biosensor using aptamers as receptors.

Lee M; Walt D R

Max Tishler Laboratory for Organic Chemistry, Tufts University, Medford, Massachusetts, 02155, USA.

Analytical biochemistry (UNITED STATES) Jun 15 2000, 282 (1) p142-6, ISSN 0003-2697 Journal Code: 0370535

Contract/Grant No.: GM48142; GM; NIGMS

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

A fiber-optic microarray biosensor using aptamers as receptors.

A fiber-optic biosensor using an aptamer receptor has been developed for the measurement of thrombin. An antithrombin **DNA** aptamer was **immobilized** on the surface of **silica** microspheres, and these aptamer beads were distributed in microwells on the distal tip of an imaging fiber. A different oligonucleotide bead type prepared using the...

...competitive binding assay with F-thrombin. The aptamer beads selectively bound to the target and could be reused without any sensitivity change. The fiber-optic **microarray** system has a detection limit of 1 nM for nonlabeled thrombin, and each test can be performed in ca. 15 min including the regeneration time...

8/3,K/30 (Item 30 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.

10570136 PMID: 10673612

[DNA chips]

Les puces a ADN.

Delpech M

Laboratoire de biochimie et genetique moleculaire, Hopital Cochin, Faculte de medecine Cochin-Port-Royal, ICGM, 123, boulevard Port-Royal, 75014 Paris.

Annales de biologie clinique (FRANCE) Jan-Feb 2000, 58 (1) p29-38,
ISSN 0003-3898 Journal Code: 2984690R
Document type: Journal Article; Review; Review, Tutorial ; English
Abstract
Languages: FRENCH
Main Citation Owner: NLM
Record type: Completed

DNA chips represent a **miniaturization** of the classical system of reverse dot-blot. They consist of a small size support made of plastic or **glass** or silicium on which probes are synthesized or **immobilized**. It is thus possible to fix a few thousand or even a hundred of thousands of probes per cm². Practically the chips are hybridized with...

8/3,K/31 (Item 31 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.

10465824 PMID: 10565276

Dynamic DNA hybridization on a chip using paramagnetic beads.
Fan Z H; Mangru S; Granzow R; Heaney P; Ho W; Dong Q; Kumar R
Sarnoff Corporation, Princeton, New Jersey 08543, USA. zfan@sarnoff.com
Analytical chemistry (UNITED STATES) Nov 1 1999, 71 (21) p4851-9,
ISSN 0003-2700 Journal Code: 0370536
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Dynamic DNA hybridization is presented as an approach to perform gene expression analysis. The method is advantageous because of its dynamic supplies of both DNA samples and probes. The approach was demonstrated on a **microfluidic** platform by incorporating paramagnetic beads as a transportable solid support. A **glass** chip was fabricated to allow simultaneous interrogation of eight DNA target samples by DNA probes.

DNA targets were **immobilized** on beads via streptavidin-biotin conjugation or base pairing between oligonucleotide residues. The DNA /bead complex was introduced into the device in which hybridization took place with a complementary probe. The hybridized probe was then removed by heat denaturation to allow the DNA sample to be interrogated again by another probe with a different sequence of interest. A pneumatic pumping apparatus was constructed to transport DNA probes and other reagents into the **microfluidic** device while hydrostatic pumping was used for the introduction of paramagnetic beads with samples. After investigating three types of paramagnetic beads, we found Dynabeads Oligo...

... 12 times, and the hybridization signal was maintained within experimental variation. Demonstration of specific hybridization reactions in an array format was achieved using four synthesized DNA targets in duplicate and five probes in sequence, indicating the potential application of this approach to gene expression analysis.

8/3,K/32 (Item 32 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.

10290692 PMID: 7988016

Urea and lactate determined in 1-microL whole-blood samples with a miniaturized thermal biosensor.
Xie B; Harborn U; Mecklenburg M; Danielsson B
Lund University, Sweden.
Clinical chemistry (UNITED STATES) Dec 1994, 40 (12) p2282-7, ISSN 0009-9147 Journal Code: 9421549

Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Urea and lactate determined in 1-microL whole-blood samples with a miniaturized thermal biosensor.

A miniaturized flow-injected thermal biosensor was developed for the determination of urea and L-lactate in undiluted blood in 1-microL samples. The sensor employed a small enzyme column constructed of stainless steel tubing and microbead thermistors. Urease and lactate oxidase/catalase were separately immobilized onto controlled-pore glass beads, which, in turn, were charged into the enzyme column. With a flow rate of 70 microL/min, linear analytical ranges from 0.2 to at least 50 mmol/L and 0.2 to...

; Buffers; Catalase; Enzymes, Immobilized; Exercise--physiology--PH; Heat ; Hydrogen-Ion Concentration; Lactic Acid; Miniaturization ; Mixed Function Oxygenases; Thermodynamics; Urease

8/3,K/33 (Item 33 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
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10124092 PMID: 8019646

Red cell antibody screening, red cell antibody identification and compatibility testing with the Column Agglutination Technology (CAT). The Bio Vue system.

Lamy B; Tissot C; Heyd C; Lamy C
Regional Blood Transfusion Center, Besancon.
Transfusion clinique et biologique - journal de la Societe francaise de transfusion sanguine (FRANCE) 1994, 1 (2) p121-7, ISSN 1246-7820
Journal Code: 9423846

Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

A new system for irregular antibody screening was described in 1993 by Reis K.J. This test is performed in a microcolumn prefilled with glass microbeads in suspension in a neutral or Anti Human Globulin isotonic solution. When the red cells are sensitized they are trapped by the microbead suspension during column centrifugation. 21365 irregular antibody screenings were performed with this Column Agglutination Technology (CAT) and the results were compared to those obtained with conventional manual tests. The CAT was more efficient than the manual tests. The number of positive samples containing specific antibodies was higher with CAT tests (924 samples) than with manual tests (802 samples). The CAT is easy to perform and the elimination of washing steps...

8/3,K/34 (Item 34 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2005 The Dialog Corp. All rts. reserv.

09781852 PMID: 8342229

Column agglutination technology: the antiglobulin test.

Reis K J; Chachowski R; Cupido A; Davies D; Jakway J; Setcavage T M
Ortho Diagnostic Systems Inc., Raritan, NJ.
Transfusion (UNITED STATES) Aug 1993, 33 (8) p639-43, ISSN 0041-1132
Journal Code: 0417360

Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

A new system for typing and screening blood, based on the sieving effect of **glass** bead microparticles, has been developed. The test is performed in a **microcolumn** in which the red cell agglutinates are trapped in the **glass** bead matrix during centrifugation, and unagglutinated cells form a pellet at the bottom of the column. Anti-human globulin reagents were incorporated in the diluent...

... system, column agglutination technology, was compared to conventional tube tests and low-ionic-strength method. Sera and plasmas (228 samples) were screened for red cell **antibodies** with two anti-human globulin reagents: one containing only anti-IgG and the other containing both anti-IgG and anti-C3b, -C3d. After initial testing...

8/3;K/35 (Item 35 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
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09157221 PMID: 1768861

A method for DNA sequencing by hybridization with oligonucleotide matrix.

Khrapko K R; Lysov YuP; Khorlin A A; Ivanov I B; Yershov G M; Vasilenko S K; Florentiev V L; Mirzabekov A D

V.A. Engelhardt Institute of Molecular Biology, Academy of Sciences of the USSR, Moscow.

DNA sequence - the journal of DNA sequencing and mapping (SWITZERLAND)
1991, 1 (6) p375-88, ISSN 1042-5179 Journal Code: 9107800

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

A new technique of **DNA** sequencing by hybridization with oligonucleotide matrix (SHOM) which could also be applied for **DNA** mapping and fingerprinting, mutant diagnostics, etc., has been tested in model experiments. A dot matrix was prepared which contained 9 overlapping octanucleotides (8-mers) complementary to a common 17-mer. Each of the 8-mers was **immobilized** as individual dot in thin layer of polyacrylamide gel fixed on a **glass** plate. The matrix was hybridized with the 32P-labeled 17-mer and three other 17-mers differing from the first one by a single base...

... 32 out of 35 cases. These results are discussed with respect to the applicability of the approach for sequencing. It was shown that hybridization of **DNA** with an **immobilized** 8-mer in the presence of a labeled 5-mer led to the formation of a stable duplex with the 5-mer only if the...

...base pairs long. These experiments and computer simulations suggest that continuous stacking hybridization may increase the efficiency of sequencing so that random or natural coding **DNA** fragments about 1000 bases long could be sequenced in more than 97% of cases. **Miniaturized** matrices or sequencing chips were designed, where oligonucleotides were **immobilized** within 100 x 100 micron dots disposed at 100 micron intervals. Hybridization of fluorescently labeled **DNA** fragments with microchips may simplify sequencing and ensure sensitivity of at least 10 attomoles per dot. The perspectives and limitations of SHOM are discussed.

8/3;K/36 (Item 36 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
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05219389 PMID: 527227

Use of immobilized enzymes in automated clinical analysis: determination

of uric acid and glucose using immobilized enzymes in column form.

Endo J; Tabata M; Okada S; Murachi T

Clinica chimica acta; international journal of clinical chemistry (NETHERLANDS) Jul 16 1979, 95 (2) p411-7, ISSN 0009-8981

Journal Code: 1302422

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

We studied the use of immobilized enzymes, covalently bound to alkylaminosilane derivative of porous glass, to automated clinical analysis on uric acid and glucose in blood, serum and urine. A microcolumn with an immobilized enzyme was prepared and used in an AutoAnalyzer I continuous flow system. Uricase (EC 1.7.3.3) from *Candida utilis* and glucose oxidase (EC 1.1.3.4) from *Aspergillus niger* were immobilized for the determination of uric acid and glucose, respectively. Hydrogen peroxide produced by these oxidases was colorimetrically determined using horse-radish peroxidase (EC 1.11.1.7) and a hydrogen acceptor in solution. Sensitivity and wash characteristics of a column with immobilized enzyme, 1.5 mm of inner diameter and up to 40 mm in length, were satisfactory at an assay speed of 50 samples per hour. The results correlated well with those obtained by other well established methods utilizing the AutoAnalyzer system. The immobilized enzymes were sufficiently stable for at least two months of 2000 tests when used repeatedly. Clinical trials proved that this method is capable of replacing the soluble enzyme method, giving reliable and reproducible results at lower cost.

8/3,K/37 (Item 1 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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0014023456 BIOSIS NO.: 200200616967

Community Genome Arrays: An approach for detection and quantification of selected bacterial taxa in environmental samples

AUTHOR: Wu L (Reprint); Thompson D K (Reprint); Bagwell C E (Reprint); Tiedje J M; Zhou J (Reprint)

AUTHOR ADDRESS: Oak Ridge National Lab., Oak Ridge, TN, USA**USA

JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 102 p387 2002 2002

MEDIUM: print

CONFERENCE/MEETING: 102nd General Meeting of the American Society for Microbiology Salt Lake City, UT, USA May 19-23, 2002; 20020519

SPONSOR: American Society for Microbiology

ISSN: 1060-2011

DOCUMENT TYPE: Meeting; Meeting Abstract

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Prototype glass slide-based microarrays, referred to as Community Genome Arrays (CGAs), were constructed to evaluate the application of microarray-based genomic technology to assessing microbial community composition. CGAs contained pure genomic DNA from 54 different formally characterized reference organisms and environmental isolates, including Gram-positive bacteria and a-, b-, and g-proteobacteria. Immobilized probe genomic DNA was interrogated with Cy3- or Cy5-labeled target genomic DNA prepared by a random prime labeling method. Optimization studies for microarray fabrication and hybridization indicated that (1) as little as 50 ng/ml of probe genomic DNA could be detected with fluorescently labeled target genomic DNA, while no substantial increase in signal intensity was observed for

arrayed genomic DNA >200 ng/ml; and (2) reasonable specificity was obtained using 50% formamide in the hybridization buffer at 55degreeC. While genomes of species within the genera...

...reliable species-level discrimination and to some extent subspecies discrimination. Detection sensitivity experiments demonstrated that as little as 0.2 ng of pure genomic target DNA could be detected by CGA hybridization. The quantitative potential of CGA hybridization was also examined using genomic DNA from a single pure culture and a mixed DNA population. A strong linear relationship (r^2 values >0.90) between hybridization signal intensity and DNA concentration was obtained, suggesting that **microarray** hybridization is quantitative within a limited range of DNA target concentration. CGA hybridization data were compared to traditional DNA - DNA hybridization and 16S rDNA and gyrB sequences. The feasibility of using CGA hybridization to analyze diverse environmental samples was also investigated. Our work suggests that **glass** slide-based microarrays have potential as tools for revealing genomic composition of natural microbial communities.

8/3,K/38 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0013991850 BIOSIS NO.: 200200585361

Microarray approach for detection and identification of Escherichia coli pathotypes

AUTHOR: Ali S Bekal-Si (Reprint); Brousseau R (Reprint); Masson L (Reprint); Fairbrother J; Harel J

AUTHOR ADDRESS: Biotechnology Research Institute, National Research Council of Canada, Montreal, PQ, Canada**Canada

JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 102 p157 2002 2002

MEDIUM: print

CONFERENCE/MEETING: 102nd General Meeting of the American Society for Microbiology Salt Lake City, UT, USA May 19-23, 2002; 20020519

SPONSOR: American Society for Microbiology

ISSN: 1060-2011

DOCUMENT TYPE: Meeting; Meeting Abstract

RECORD TYPE: Abstract

LANGUAGE: English

Microarray approach for detection and identification of Escherichia coli pathotypes

...ABSTRACT: of biochemical and immunological methods; such methods, though relatively accurate, are rather laborious, expensive and complex. Alternatively, new molecular tools have been developed based on DNA hybridization and polymerase chain reaction (PCR) detection techniques which, unfortunately, are usually limited to a small number of genes. We have developed a **DNA microarray** approach as a diagnostic tool to detect sets of genes characteristic of a given pathotype since such an approach permits the parallel processing of hundreds to thousands of genes. In this study, probes for more than 100 virulence genes present in different E. coli pathotypes were printed and **immobilized** on a **glass** slide. Hybridization of the **immobilized microarray** probes with 100 ng of labeled genomic DNA, permitted the detection of a large number of virulence genes present on the genome and hence an easy identification of the pathotype of a given E. coli strain. Furthermore our **microarray** would be a useful tool for the detection and analysis of new groups of E. coli, which could emerge by the transfer of genetic virulence...

DESCRIPTORS:

...METHODS & EQUIPMENT: DNA **microarray** --

8/3,K/39 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2005 BIOSIS. All rts. reserv.

0013902391 BIOSIS NO.: 200200495902

Biological microchips with hydrogel-immobilized nucleic acids, proteins, and other compounds: Properties and applications in genomics
AUTHOR: Barsky V E (Reprint); Kolchinsky A M; Lysov Yu P (Reprint);
Mirzabekov A D (Reprint)
AUTHOR ADDRESS: Engelhardt Institute of Molecular Biology, Russian Academy
of Sciences, Moscow, 119991, Russia**Russia
JOURNAL: Molekulyarnaya Biologiya (Moscow) 36 (4): p563-584 July-August,
2002 2002
MEDIUM: print
ISSN: 0026-8984
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Russian

ABSTRACT: The MAGIChip (MicroArrays of Gel- **Immobilized** Compounds on a chip) consists of an array of hydrophilic gel pads fixed on a hydrophobic glass surface. These pads of several picoliters to several nanoliters in volume contain the gel- **immobilized** nucleic acids, **proteins**, and other compounds, as well as live cells. They are used to conduct chemical and enzymatic reactions with the **immobilized** compounds or samples bound to them. In the latter case, nucleic acid fragments can be hybridized, modified, and fractionated within the gel pads. The main...

...analyze nucleic acid sequences (PCR, detachment of primers and PCR-amplified products from a substrate, hybridization, ligation, and others) can be also performed within the **microchip** pads. A flexible, multipurpose, and inexpensive system has been developed to register the processes proceeding on a **microchip**. The system provides unique possibilities for research and biomedical applications, allowing one to register both equilibrium states and the course of reaction in real time. The system is applied to analyze both kinetic and thermodynamic characteristics of molecular interaction in the duplexes formed between nucleic acids and the probes **immobilized** within the **microchip** gel pads. Owing to the effect of stacking interaction of nucleic acids, the use of short oligonucleotides extends the possibilities of microchips for analysis of...

...characterize the genes of pathogenic bacteria responsible for drug resistance, and to study translocations in the human genome. On the basis of the MAGIChip, the **protein** microchips have been created, containing the **immobilized** antibodies, antigens, **enzymes**, and many other substances, as well as the microchips with the gel- **immobilized** live cells.

8/3,K/40 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0013790586 BIOSIS NO.: 200200384097

Large-scale analysis of gene expression: Methods and application to the kidney
AUTHOR: Cheval Lydie; Virlon Berangere; Billon Emmanuelle; Aude
Jean-Christophe; Elalouf Jean-Marc; Doucet Alain (Reprint)
AUTHOR ADDRESS: CE Saclay, Batiment 520, 91198, Gif sur Yvette Cedex,
France**France
JOURNAL: JN Journal of Nephrology 15 (S5 Supplement): pS170-S183
March-April, 2002 2002
MEDIUM: print
ISSN: 1121-8428

DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

...ABSTRACT: gene functions, and b) determination of the totality of genes expressed in a cell seems a prerequisite for understanding cell functions, because the properties of **proteins** vary with their environment. Sophisticated methods are now available for transcriptome analysis. They are based on serial, partial sequencing of cDNAs (sequencing of expressed sequenced tags (ESTs) and serial analysis of gene expression (SAGE)), or on parallel hybridization of labeled cDNAs to specific probes **immobilized** on a grid (macro- and microarrays and DNA chips). Some methods were designed specifically to compare gene expression under different conditions (subtractive hybridization, **glass** microarrays). However, all these methods require several mug of mRNA as starting material, making impossible, in most tissues, to analyse gene expression in homogeneous cell...

...following: a) each cDNA is characterized by a 10-bp informative sequence called tag, b) the information from several transcripts is condensed into a single **DNA** molecule by concatenation of several tags, c) sequencing of individual clones from the library of concatemers, computer analysis of sequences and interrogation of sequence databases...

DESCRIPTORS:

METHODS & EQUIPMENT: glass **microarray** method...

8/3,K/41 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0013723369 BIOSIS NO.: 200200316880

Low-density DNA microarrays are versatile tools to screen for known mutations in hypertrophic cardiomyopathy

AUTHOR: Waldmueller Stephan (Reprint); Freund Petra; Mauch Simon; Toder Roland; Vosberg Hans-Peter

AUTHOR ADDRESS: Department of Experimental Cardiology, Max-Planck-Institute for Physiological and Clinical Research, Benekestr. 2, D-61231, Bad Nauheim, Germany**Germany

JOURNAL: Human Mutation 19 (5): p560-569 2002 2002

MEDIUM: print

ISSN: 1059-7794

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

...ABSTRACT: screen patients for known mutations, before more laborious techniques capable of detecting new mutations are applied. Here we demonstrate that the principle of hybridization of **DNA** to oligonucleotide probes **immobilized** on chips (**glass** slides) can be applied for this purpose. We have developed a low-density oligonucleotide probe array capable of detecting 12 different heterozygous mutations (in four...

...biochip reader. The technique turned out to be robust: Variations in either the relative position of a mutation, or the amount and size of target- **DNA** were compatible with mutation detection. Mutations could even be detected in amplicons as long as 800 bp, allowing the screening of more than one exon...

DESCRIPTORS:

...METHODS & EQUIPMENT: low-density **DNA microarray** --

8/3,K/42 (Item 6 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

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0013656709 BIOSIS NO.: 200200250220

**Automated genomic profiling in Chronic Lymphocytic Leukemia using
microarray based hybridization (Matrix-CGH)**

AUTHOR: Schwaenen Carsten (Reprint); Nessling Michelle (Reprint);
Wessendorf Swen; Goettel Daniel (Reprint); Wrobel Gunnar (Reprint); Fritz
Bjoern (Reprint); Bentz Martin; Doehner Hartmut; Stilgenbauer Stephan;
Lichter Peter (Reprint)

AUTHOR ADDRESS: Organisation Komplexer Genome, Deutsches
Krebsforschungszentrum, Heidelberg, Germany**Germany

JOURNAL: Blood 98 (11 Part 1): p763a November 16, 2001 2001

MEDIUM: print

CONFERENCE/MEETING: 43rd Annual Meeting of the American Society of
Hematology, Part 1 Orlando, Florida, USA December 07-11, 2001; 20011207

SPONSOR: American Society of Hematology

ISSN: 0006-4971

DOCUMENT TYPE: Meeting; Meeting Abstract

RECORD TYPE: Abstract

LANGUAGE: English

**Automated genomic profiling in Chronic Lymphocytic Leukemia using
microarray based hybridization (Matrix-CGH)**

...ABSTRACT: and demanding non-automated evaluation procedures. Detailed
molecular genetic screening for multiple genomic aberrations in a single
experiment can be achieved by a recently developed **microarray** based
technique, termed Matrix-CGH. This approach allows the application of CGH
to defined **DNA** targets **immobilized** on glass slides. In contrast to
other methods, Matrix-CGH allows genomic analysis with much higher
resolution, marker-oriented analysis e.g. with contigs, fully automated
evaluation procedures and copy number evaluations of hundreds of defined
regions in a single experiment. We constructed a **DNA microarray**,
specifically designed for the application in CLL patients, containing 495
PAC- and BAC- **DNA** fragments. Clones were selected for oncogenes, tumor
suppressor genes and frequently altered chromosomal regions in CLL (3q26,
6q21, 8q24, 10q24, 11q22, 12q13, 13q34, 17p13, 18q21). **DNA** samples of
20 CLL patients were analyzed and the results were compared to results
from FISH or chromosomal CGH experiments. In 17/20 patients (85...

DESCRIPTORS:

MISCELLANEOUS TERMS: **DNA microarray** ;

8/3,K/43 (Item 7 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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0013647697 BIOSIS NO.: 200200241208

**Automated genomic profiling using microarray based hybridization
(Matrix-CGH): A powerful technique for the detection of
DNA-amplifications in aggressive lymphoma**

AUTHOR: Wessendorf Swen (Reprint); Schwaenen Carsten; Barth Thomas F E;
Doerfel Jeannette (Reprint); Kohlhammer Holger (Reprint); Nessling
Michelle; Wrobel Gunnar; Fritz Bjoern; Moeller Peter; Doehner Hartmut
(Reprint); Lichter Peter; Bentz Martin (Reprint)

AUTHOR ADDRESS: Innere Medizin III, Universitaet Ulm, Ulm, Germany**Germany

JOURNAL: Blood 98 (11 Part 1): p464a November 16, 2001 2001

MEDIUM: print

CONFERENCE/MEETING: 43rd Annual Meeting of the American Society of
Hematology, Part 1 Orlando, Florida, USA December 07-11, 2001; 20011207

SPONSOR: American Society of Hematology

ISSN: 0006-4971

DOCUMENT TYPE: Meeting; Meeting Abstract

RECORD TYPE: Abstract

LANGUAGE: English

**Automated genomic profiling using microarray based hybridization
(Matrix-CGH): A powerful technique for the detection of
DNA-amplifications in aggressive lymphoma**

...ABSTRACT: single gene can be as high as 20%. Due to technical limitations of CGH, amplifications of less than 2 Mbp cannot be detected safely. Using **microarray** technology, recently a more sensitive approach has been developed allowing the application of CGH to defined **DNA** targets **immobilized** on **glass** slides (genomic \square **DNA** \square -chip hybridization; Matrix-CGH). In addition to a much higher spatial resolution (100-200 kbp), a fully automated evaluation of the genomic hybridizations is possible. To explore the potential of Matrix-CGH for the detection of gene amplifications in lymphoma, a chip containing 410 genomic PAC and BAC **DNA** fragments was designed. Targets were selected for proto-oncogenes (e.g. BCL2, JAK2, REL, MDM2), cell cycle control genes (e.g. CCND2), tumor suppressor genes...

...lymphoma with known gene amplifications were analyzed. The amplicons were unambiguously detected in all four cases. In comparison to chromosomal CGH, the actual number of **DNA** -copies within the amplified regions was assessed more accurately. In addition, the amplicons containing the MYC gene were further characterized using a contig of eight PAC clones. In HL60, the amplified chromosomal region showed previously unknown discontinuities, which were confirmed by FISH analysis. Subsequently, **DNA** samples from 13 unselected patients with diffuse large B-cell lymphomas were analyzed. In 5 of 13 cases, gene amplifications were identified affecting the BCL2...

DESCRIPTORS:

MISCELLANEOUS TERMS: **microarray** ;

8/3,K/44 (Item 8 from file: 5)
DIALOG(R) File 5:Biosis Previews(R)
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0013629397 BIOSIS NO.: 200200222908

**Optimized target-group discrimination using a DNA microarray format to
identify nitrifying species**

AUTHOR: Kelly J J (Reprint); Sappelsa L; Stahl D A
AUTHOR ADDRESS: Northwestern University, Evanston, IL, USA**USA
JOURNAL: Abstracts of the General Meeting of the American Society for
Microbiology 101 p502-503 2001 2001
MEDIUM: print
CONFERENCE/MEETING: 101st General Meeting of the American Society for
Microbiology Orlando, FL, USA May 20-24, 2001; 20010520
SPONSOR: American Society of Microbiology
ISSN: 1060-2011
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

**Optimized target-group discrimination using a DNA microarray format to
identify nitrifying species**

ABSTRACT: **DNA** microarrays have tremendous potential for the study of microbial communities, as they provide a format for massively parallel hybridization of oligonucleotide probes. This could potentially...

...of hundreds or thousands of different microbial populations, which would be a major increase in throughput from currently available techniques. We are working with a **microarray** format in which oligonucleotide probes are **immobilized** within individual polyacrylamide gel elements affixed to a **glass** slide, and target nucleic acids are fluorescently labeled before hybridization. We have designed a **DNA** **microarray** containing 22

oligonucleotide probes targeting the 16S rRNA of several groups of nitrifying bacteria. In order to evaluate and optimize mismatch discrimination, we used a fluorescence microscope equipped with a temperature-controlled stage, which enabled us to generate a melting curve for each probe-target duplex within the **microarray** simultaneously. We hybridized the microarrays with in-vitro transcribed RNA from several reference organisms: *Nitrosomonas eutropha*, *Nitrospira briensis*, and *Hydrogenophaga taeniospiralis*. Melting curves obtained for each of these reference RNAs demonstrated that we could achieve single base mismatch discrimination using the **microarray** format and allowed us to determine the dissociation temperature (Td) for several of the probes within our **microarray**. These reference RNAs were then hybridized with the **microarray** both individually and in mixtures. Fluorescent intensity data was collected from each element within the **microarray** at 1degreeC intervals using the microscope's temperature controlled stage to shift the **microarray** temperature from 10degreeC to 70degreeC. When the signal for each of the probes was normalized using the experimentally determined Td, this **microarray** demonstrated excellent discrimination among the reference RNAs both individually and in mixtures.

8/3,K/45 (Item 9 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0013629394 BIOSIS NO.: 200200222905

Optimization of 16S rRNA-based microchip "PhyloChip" for microbial community analysis

AUTHOR: El Fantroussi S (Reprint); Urakawa H (Reprint); Kelly J J; Sappelsa L; Noble P A (Reprint); Stahl D A (Reprint)

AUTHOR ADDRESS: University of Washington, Seattle, WA, USA**USA

JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 101 p502 2001 2001

MEDIUM: print

CONFERENCE/MEETING: 101st General Meeting of the American Society for Microbiology Orlando, FL, USA May 20-24, 2001; 20010520

SPONSOR: American Society of Microbiology

ISSN: 1060-2011

DOCUMENT TYPE: Meeting; Meeting Abstract

RECORD TYPE: Abstract

LANGUAGE: English

Optimization of 16S rRNA-based microchip "PhyloChip" for microbial community analysis

ABSTRACT: We are working with a **DNA microchip** format in which oligonucleotide probes are **immobilized** within individual polyacrylamide gel elements (100X100X20 mum) affixed to a **glass** slide. Target nucleic acids are fragmented and fluorescently labeled before hybridization with the **immobilized** probes. Our current chip design uses oligonucleotide probes (15-25 nucleotides) to identify microorganisms at different taxonomic ranks using the 16S rRNAs as probe targets. A fully developed **DNA microchip** might be used to characterize virtually any environment, using hybridization patterns to define both community structure and monitor gene expression. Our prototype chip has focused...

...genus, and species. We here present the results of a study designed to optimize the specificity and sensitivity of target/probe hybridization to all probes **immobilized** on this **microchip**. *Bacillus anthracis*, *Staphylococcus epidermidis*, and *Paenibacillus thiaminolyticus* were used as reference organisms. Different concentrations of formamide ranging from 0 to 70% in the hybridization solution...

8/3,K/46 (Item 10 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0013374643 BIOSIS NO.: 200100546482

Spatially-encoded analyte detection

AUTHOR: Kuhr Werner G (Reprint); Singhal Pankaj; Brazill Sara Ann
AUTHOR ADDRESS: Oak Hills, CA, USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office
Patents 1250 (4): Sep. 25, 2001 2001
MEDIUM: e-file
PATENT NUMBER: US 6294392 PATENT DATE GRANTED: September 25, 2001 20010925
PATENT CLASSIFICATION: 436-518 PATENT ASSIGNEE: The Regents of the
University of California PATENT COUNTRY: USA
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A flow-through **microchannel** (e.g. capillary) biosensor is described for the for the detection of multiple, different analytes (e.g. nucleic acids, **proteins** , sugars, etc.) targets in a sample by binding them to "complementary" binding partners (e.g. complementary nucleic acids, ligands, **antibodies** , etc.). The binding partners are **immobilized** in different sections of a **microchannel** (e.g. a fused **silica** capillary). After fabrication of the biosensor, a sample is flushed through the capillary, and any target analyte(s) contained within the sample are bound to the **immobilized** binding partner(s) on the **microchannel** wall forming bound complexes. Finally, the bound complexes are simultaneously denatured along the entire length of the capillary and flushed out past a detector poised downstream, and the analyte concentration is measured (e.g., using sinusoidal voltammetry). Direct electrochemical detection of underivatized **DNA** is accomplished by oxidizing its sugar backbone and the amine containing nucleobase at the copper electrode. The elution time of the desorbed target **DNA** (s) is used for the sequence identification of the target. Multiple genetic sequences can be diagnosed by using a single biosensor in this manner. The...

DESCRIPTORS:

METHODS & EQUIPMENT: flow-through **microchannel** biosensor...

8/3,K/47 (Item 11 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0013344982 BIOSIS NO.: 200100516821

Validation of sequence optimized 70 base pair oligonucleotides for use on DNA microarrays

AUTHOR: ten Bosch John (Reprint); Seidel Chris (Reprint); Batra Sajeev (Reprint); Lam Hugh (Reprint); Tuason Nico (Reprint); Saljoughi Sepp (Reprint); Saul Robert (Reprint)
AUTHOR ADDRESS: Operon Technologies, Inc., Alameda, CA, USA**USA
JOURNAL: International Genome Sequencing and Analysis Conference 12 p88
2000 2000
MEDIUM: print
CONFERENCE/MEETING: 12th International Genome Sequencing and Analysis Conference Miami Beach, Florida, USA September 12-15, 2000; 20000912
DOCUMENT TYPE: Meeting; Meeting Abstract; Meeting Poster
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: In general, current **microarray** protocols utilize double stranded PCR products spanning the entire open reading frame (ORF) as the **DNA** targets **immobilized** onto□glass□slides. We have synthesized

6,307 70-mers representing each ORF in *Saccharomyces cerevisiae* for use on arrays designed to monitor gene expression. Each of...

DESCRIPTORS:

METHODS & EQUIPMENT: DNA **microarray** analysis...

8/3,K/48 (Item 12 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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0013312242 BIOSIS NO.: 200100484081

Double biological microchip : Use for investigation of biochemical reactions

AUTHOR: Zasedateleva O A (Reprint); Krylov A S (Reprint); Sharonov A Yu (Reprint); Mirzabekov A D (Reprint)

AUTHOR ADDRESS: Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, ul. Vavilova, 32, Moscow, 117984, Russia**Russia

JOURNAL: *Sensornye Sistemy* 15 (1): p85-92 January-March, 2001 2001

MEDIUM: print

ISSN: 0235-0092

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: Russian

Double biological microchip : Use for investigation of biochemical reactions

ABSTRACT: A new, so called double biological **microchip** (double biochip) was created for investigation of biochemical reactions. The biochip is a **glass** slide bearing hundreds microscopic gel pads. **Immobilized** in each pad is a short piece of **DNA** up to hundreds of nucleotides. The oligonucleotides are capable of hybridizing with fluorescently labeled complementary fragments of **DNA**. The level of hybridization is measured by the intensity of fluorescence signal. The proposed method is based on parallel fabrication of two biochips followed by their parallel hybridization with **DNA** or **proteins**. One of the biochips is then used to study a particular reaction, the other serves as the control. Melting of two oligonucleotides was chosen as...

...factors (ionic strength, ligands) on the melting of double stranded oligonucleotides on the biochip. The method is suitable for all kinds of processes: melting, hybridization, **enzyme** reactions (PCR, ligation).

DESCRIPTORS:

METHODS & EQUIPMENT: double biological **microchip** --

8/3,K/49 (Item 13 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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0012937603 BIOSIS NO.: 200100109442

Changes of gene expression profiles during neuronal differentiation of cortical stem cells

AUTHOR: Lee Y S (Reprint); Lee K H; Yoo D H; Ahn J I; Chung I S; Chang M Y; Kim J Y; Kim J H; Lee Y S; Lee S H; McKay R

AUTHOR ADDRESS: Hanyang Univ Col of Med, Seoul, South Korea**South Korea

JOURNAL: *Society for Neuroscience Abstracts* 26 (1-2): pAbstract No.-692.15 2000 2000

MEDIUM: print

CONFERENCE/MEETING: 30th Annual Meeting of the Society of Neuroscience New Orleans, LA, USA November 04-09, 2000; 20001104

SPONSOR: Society for Neuroscience

ISSN: 0190-5295

DOCUMENT TYPE: Meeting; Meeting Abstract

RECORD TYPE: Abstract

LANGUAGE: English

...ABSTRACT: associated with neuronal differentiation of cortical stem cells. Over 2,400 known genes and 1,700 unknown genes isolated from developing fetal rat brain were **immobilized** on a **glass** chip and fluorescence-labeled cDNA were hybridized. Cortical neuronal stem cells were isolated from E15 rat fetus and expanded under the presence of bFGF. After induction of neuronal differentiation, **RNA** were isolated on intervals and used to construct cDNA. The differentiation pattern was characterized by immunostaining and measuring spontaneous EPSC and compared to gene expression profiles obtained from cDNA **microarray** .

DESCRIPTORS:

METHODS & EQUIPMENT: complementary DNA **microarray** --

8/3,K/50 (Item 14 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0011956031 BIOSIS NO.: 199900215691

Enzymatic flow-injection analysis of metabolites using new type of oxygen sensor membranes and phosphorescence phase measurements

AUTHOR: Ovchinnikov Alexandr N (Reprint); Ogurtsov Vladimir I (Reprint); Trettnak Wolfgang; Papkovsky Dmitri B

AUTHOR ADDRESS: Moscow Power Engineering Institute, Krasnokazarmennaia St. 14, 111250, Moscow, Russia**Russia

JOURNAL: Analytical Letters 32 (4): p701-716 Feb., 1999 1999

MEDIUM: print

ISSN: 0003-2719

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

...ABSTRACT: membrane is positioned in a compact integrated flow-through cell and exposed to the flow stream. Using glucose as a test analyte and glucose oxidase **enzyme** , two different sensor setups were tested: 1) the membrane type biosensor in which the **enzyme** is **immobilized** directly on the oxygen sensor membrane; 2) the **microcolumn** type biosensor in which the **enzyme** is **immobilized** separately, on a microparticle sorbent (controlled pore **glass**) and put into a **microcolumn** with the oxygen sensor membrane placed at the column outlet. In either case a new type of oxygen sensitive material was used, which provides a...

DESCRIPTORS:

...METHODS & EQUIPMENT: **microcolumn** cell

8/3,K/51 (Item 15 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0011206908 BIOSIS NO.: 199800001155

Diffusion and transfer of antibody proteins from a sugar-based hydrogel

AUTHOR: Markowitz Michael A (Reprint); Turner David C; Martin Brett D; Gaber Bruce P

AUTHOR ADDRESS: Lab. Mol. Interfacial Interactions, Code 6930, Naval Res. Lab., Washington, DC 20375, USA**USA

JOURNAL: Applied Biochemistry and Biotechnology 68 (1-2): p57-68
Oct.-Nov., 1997 1997

MEDIUM: print

ISSN: 0273-2289

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Diffusion of antibody **protein** from hydrogel films and hydrogel

encapsulated in a microcapillary was studied. Thin hydrogel films were formed by crosslinking 6-acryloyl-B-O-methylgalactoside with N,N'-methylene-bis-acrylamide and the...

...in a capillary tube and the transport of antimouse IgG-FITC into and out of the hydrated hydrogel was measured. Kinetic analysis indicated that the **protein** transport through the capillary hydrogel was faster than would be expected for a simple diffusion process. Finally, by utilizing the diffusion of antibody from the capillary hydrogel, transfer of antibody to a **silica** surface was demonstrated. A capillary hydrogel loaded with antimouse IgG-FITC was used to transfer the **protein** to a **silica** surface forming a 30- μ m spot of antibody, which was imaged using fluorescence microscopy. These results may lead to the development of a nonlithographic method of patterning **antibodies** on surfaces for use in integrated microimmunosensors.

DESCRIPTORS:

MISCELLANEOUS TERMS: ...device **miniaturization**

8/3,K/52 (Item 16 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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0011068015 BIOSIS NO.: 199799702075

Manual manufacturing of oligonucleotide, DNA, and protein microchips

AUTHOR: Guschin Dmitry; Yershov Gennadiy; Zaslavsky Alexander; Gemmell Anne ; Shick Valentin; Proudnikov Dmitry; Arenkov Pavel; Mirzabekov Andrei (Reprint)

AUTHOR ADDRESS: Argonne Natl. Lab., 9700 S. Cass Ave., Argonne, IL 60439, USA**USA

JOURNAL: Analytical Biochemistry 250 (2): p203-211 1997 1997

ISSN: 0003-2697

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: A simple procedure for manufacturing microchips containing various gel- **immobilized** compounds is described. A gel photopolymerization technique is introduced to produce micromatrices of polyacrylamide gel pads (25 times 25 times 20 μ -m and larger) separated by a hydrophobic **glass** surface. A pin device for the manual application of a compound in solution onto the activated polyacrylamide gel pad for immobilization is described. Oligonucleotide, **DNA** , and **protein** microchips have been produced by this method and tested by hybridization and immunoanalysis monitored with a fluorescence microscope. The effect of the lengths of the **immobilized** oligonucleotides and the hybridized **RNA** and **DNA** on hybridization of the oligonucleotide microchips was evaluated. This method can also be used for manufacturing microchips containing a variety of other compounds.

DESCRIPTORS:

MISCELLANEOUS TERMS: ...**DNA MICROCHIP** ; ...

...**OLIGONUCLEOTIDE MICROCHIP** ; ...

...**PROTEIN MICROCHIP**

8/3,K/53 (Item 17 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

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0010960834 BIOSIS NO.: 199799594894

Diagnosis of genetic mutations on oligonucleotide microchips

AUTHOR: Ivanov I B (Reprint); Ershov G M; Barskii V E; Bel'govskii A I; Kirillov E V; Kreindlin E Ya; Parinov S V; Mologina N V; Mirzabekov A D

AUTHOR ADDRESS: Max-Planck-Inst. Mol. Genet., Ihnestr. 73, D-14195 Berlin,
Germany**Germany
JOURNAL: Molekulyarnaya Biologiya (Moscow) 31 (1): p159-167 1997 1997
ISSN: 0026-8984
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Russian

ABSTRACT: Sequencing by means of hybridization with oligonucleotide **microchip** makes it possible to analyze a DNA sequence based on the results of its hybridization with a set of nucleotides **immobilized** on a **microchip**, a gel template fixed on **glass** support. This approach was used to detect beta-thalacemic mutations by means of hybridization of fluorescently-labeled DNA with a set of **immobilized** octa- and decamers or after staining of hybridized DNA by ethidium bromide. It was shown that the potentials of the **microchip** method increased when a special method of continuous hybridization was used. The results of the study suggest that sequencing by means of hybridization with oligonucleotide **microchip** can be widely used in medical diagnostics.

8/3,K/54 (Item 18 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0009623269 BIOSIS NO.: 199598091102
Urea and lactate determined in 1-mu-L whole-blood samples with a miniaturized thermal biosensor
AUTHOR: Xie Bin (Reprint); Harborn Ulrika; Mecklenburg Michael; Danielsson Bengt
AUTHOR ADDRESS: Pure Applied Biochem., Lund Univ., Box 124, S-22100 Lund, Sweden**Sweden
JOURNAL: Clinical Chemistry 40 (12): p2282-2287 1994 1994
ISSN: 0009-9147
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Urea and lactate determined in 1-mu-L whole-blood samples with a miniaturized thermal biosensor

ABSTRACT: A **miniaturized** flow-injection thermal biosensor was developed for the determination of urea and L-lactate in undiluted blood in 1-mu-L samples. The sensor employed a small **enzyme** column constructed of stainless steel tubing and microbead thermistors. Urease and lactate oxidase/catalase were separately **immobilized** onto controlled-pore **glass** beads, which, in turn, were charged into the **enzyme** column. With a flow rate of 70 mu-L/min, linear analytical ranges from 0.2 to at least 50 mmol/L and 0.2...

8/3,K/55 (Item 19 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0008967731 BIOSIS NO.: 199396132147
Fructose-6-phosphate kinase immobilized on controlled-pore glass as a substrate for selective separation of antimony(III)
AUTHOR: Beatriz De La Calle Guntinas Maria; Madrid Yolanda; Camara Carmen (Reprint)
AUTHOR ADDRESS: Dep. Quimica Analitica, Facultad Ciencias Quimicas, Univ. Complutense Madrid, 28040 Madrid, Spain**Spain
JOURNAL: Journal of Analytical Atomic Spectrometry 8 (5): p745-748 1993
ISSN: 0267-9477
DOCUMENT TYPE: Article

RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Fructose-6-phosphate kinase **immobilized** on controlled-pore **glass** and packed in a **glass microcolumn** was used for the selective separation and preconcentration of Sb-III. Results obtained for mixtures of trivalent and pentavalent antimony showed that Sb-III can be selectively separated from Sb-v after retention by the **enzyme** and elution with a 3% v/v lactic acid solution. After the elution step Sb-III was determined by electrothermal atomic absorption spectrometry. An enrichment...
...Sb-III in de-ionized, tap and sea-water gave values of around 75 +- 5% without any need to control the pH or temperature. The **immobilized enzyme** retains its activity for at least 200 elution cycles.

8/3,K/56 (Item 20 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0007803108 BIOSIS NO.: 199192048879
THE CONSTRUCTION OF MICROCALORIMETRIC BIOSENSORS BY USE OF HIGH RESOLUTION THIN-FILM THERMISTORS
AUTHOR: URBAN G (Reprint); KAMPER H; JACHIMOWICZ A; KOHL F; KUTTNER H; OLCAYTUG F; GOISER P; PITTNER F; SCHALKHAMMER T; MANN-BUXBAUM E
AUTHOR ADDRESS: L BOLTZMANN-INSTITUT FUER BIOMEDIZINISCHE MIKROTECHNIK AND INSTITUT FUER ALLGEMEINE ELEKTROTECHNIK UND ELEKTRONIK, TECHNICAL UNIVERSITY, VIENNA, AUSTRIA**AUSTRIA
JOURNAL: Biosensors and Bioelectronics 6 (3): p275-280 1991
ISSN: 0956-5663
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: A new calorimetric biosensor has been developed using thin-film thermistor arrays and **immobilized enzymes**. The **miniaturized** thermistors produced on **glass** substrates, exhibit a high sensitivity of 2%/K (TCR), a temperature resolution of 0.1 mK, a rise-time of 3 ms and high reproducibility of resistance and TCR. The life time in physiological solution is at least three months. Additionally this device can be **miniaturized** and integrated on different substrate materials. A Peltier thermostat with a temperature stability of 1 mK was built up containing two thermistor arrays which were inserted into a flow-through system to enable the detection of the heat produced by an **enzyme** reaction in a differential mode. Covalently **immobilized** glucose oxidase and catalase on controlled pore **glass** (CPG) were used to demonstrate the high sensitivity of the produced thermistor arrays.

8/3,K/57 (Item 21 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0005194551 BIOSIS NO.: 198682040938
ENZYMATIC ASSAY BY FLOW INJECTION ANALYSIS WITH DETECTION BY CHEMILUMINESCENCE DETERMINATION OF GLUCOSE CREATININE FREE CHOLESTEROL AND LACTIC-ACID USING AN INTEGRATED FLUOROIMMUNOASSAY MICROCONDUIT
AUTHOR: PETERSSON B A (Reprint); HANSEN E H; RUZICKA J
AUTHOR ADDRESS: CHEM DEP A, TECHNICAL UNIV DENMARK, BUILD 207, DK-2800 LYNGBY, DENMARK**DENMARK
JOURNAL: Analytical Letters 19 (5-6): p649-666 1986
ISSN: 0003-2719
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: A **miniaturized** flow injection system for the determination of D-glucose, L-lactic acid, creatinine and free cholesterol is described. All substrates are degraded enzymatically by means of oxidases which, along with ancillary coenzymes (creatinine assay), are **immobilized** on controlled porosity **glass** and incorporated into small PVC column reactors. The hydrogen peroxide generated by the individual oxidases is determined by chemiluminescence with an alkaline reagent containing luminol and hexacyanoferrate(III). The injection valve, flow channels, **enzyme** reactor and light detector are integrated into a FIA microconduit. The detection limits were 0.03 mg glucose/dl, 0.03 mg lactate/dl, 0.3 mM creatinine and 0.5 mg cholesterol/dl. The **enzyme** reactors all showed little change in activity over a 3 months period of operation and were found fully compatible with serum samples.

8/3,K/58 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE
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11546310 EMBASE No: 2002114465
Analysis of SNPs and other genomic variations using gel-based chips
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Human Mutation (HUM. MUTAT.) (United States) 2002, 19/4 (343-360)
CODEN: HUMUE ISSN: 1059-7794
DOCUMENT TYPE: Journal ; Review
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 45

...investigated, employing enzymatic, chemical, and physical tools [for review, see Tillib and Mirzabekov, 2001]. Our current approach is based on the use of IMAGE chips (**immobilized** microarrays of gel elements) consisting of an array of gel pads attached to a hydrophobic **glass** surface. The gel pads range in size from picoliters to nanoliters and are used for immobilization of oligonucleotide probes, as well as miniature test tubes...

...hybridized, fractionated, modified, and subjected to enzymatic reactions inside the pads. All steps of sequence analysis (PCR-amplification, activation or release of primers and products, **DNA** extension, hybridization, and reading of the results) can be performed within the same pad. A flexible and inexpensive technology platform enables one to monitor processes...

MEDICAL DESCRIPTORS:

*DNA microarray ; *single nucleotide polymorphism

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11455695 EMBASE No: 2002027219
Attachment of benzaldehyde-modified oligodeoxynucleotide probes to semicarbazide-coated glass
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Nucleic Acids Research (NUCLEIC ACIDS RES.) (United Kingdom) 24 DEC 2001, 29/24 (5090-5098)
CODEN: NARHA ISSN: 0305-1048
DOCUMENT TYPE: Journal ; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 27

Attachment of oligodeoxynucleotides (ODNs) containing benzaldehyde (BAL) groups to semi-carbazide-coated glass (SC- glass) slides is described. 5prime-BAL-ODNs are prepared using automated DNA synthesis and an acetal-protected BAL phosphoramidite reagent. The hydrophobic protecting group simplifies purification of BAL-ODNs by reverse phase HPLC and is easily removed using standard acid treatment. The electrophilic BAL-ODNs are stable in solution, but react specifically with semicarbazide groups to give semicarbazone bonds. Glass slides were treated with a semicarbazide silane to give SC- glass . BAL-ODNs are coupled to the SC- glass surface by a simple one-step procedure that allows rapid, efficient and stable attachment. Hand-spotted arrays of BAL-ODNs were prepared to evaluate loading density and hybridization properties of immobilized probes. Hybridization to radiolabeled target strands shows that at least 30% of the coupled ODNs were available for hybridization at maximum immobilization density. The array was used to probe single nucleotide polymorphisms in synthetic DNA targets, and PCR products were correctly genotyped using the same macroarray. Application of this chemistry to manufacturing of DNA microarrays for sequence analysis is discussed.

MEDICAL DESCRIPTORS:

...DNA synthesis; hydrophobicity; purification; reversed phase high performance liquid chromatography; acidification; chemical bond; hybridization; isotope labeling; immobilization; single nucleotide polymorphism; polymerase chain reaction; genotype; DNA microarray ; sequence analysis; gene targeting; controlled study; article; priority journal

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10859217 EMBASE No: 2000341238

DNA microchips: Technical and practical considerations

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DOCUMENT TYPE: Journal; Review

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 91

The development of high throughput techniques, such as DNA microarrays, engages interest in many biomedical research fields. They are becoming one of the preferred methods for large-scale expression analyses. The power of this...

...There are two main array-based technologies: cDNA and oligonucleotide arrays. cDNA arrays consist of microscope slides or nylon membranes containing hundreds to thousands of immobilized DNA probes, which are hybridized to fluorescent or radioactive complementary cDNA obtained from a target sample. Oligonucleotide chips differ in that probes are 20-25 mer selected oligonucleotides, which are bound to glass substrates and that the DNA obtained from a target sample can only be fluorescently labeled. In this review, we describe the different types of DNA -chips, the steps involved in the production of microchips, the methodological and technical aspects of microchip utilization, and their potential applications including some practical considerations utilizing clinical material.



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